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THE
IRISH BUILDER.

Architectural, Archæological, Engineering, Sanitary,
Arts, and Handicrafts.

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"The empire of man over material things, has for its only foundation the Sciences and the Arts."—LORD BACON.

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THE IRISH BUILDER.

Architectural, Archaeological, Engineering, Sanitary,
Arts and Handicrafts.

The Past and the Future.



N taking a retrospective view of all that has been accomplished during the past year in the fields of industrial progress in the British Islands, we have reason for congratulation. The progression of Ireland, though small when compared with the sister kingdom, is nevertheless marked in some particulars, and calls for notice in these pages. The amount of architectural and engineering works begun or executed during the past year is not large, but a portion of that in process of execution is commendable, and, when completed, will probably mark an era which will not be forgotten. Among the chief evidences of public spirit in Ireland during the past year, apart from its public utility, was the embodiment of the proposal of the Messrs. Guinness, which resulted in the opening of another national exhibition. This exhibition, viewed apart as a native exposition, though it fell short of what its best friends might desire, yet it accomplished much, and we hope lasting, good. The continued and satisfactory progress of the restoration of Christ Church Cathedral is another matter to feel pleased with, and, when finished, the city will be able to point with pride to two works which the munificence of two of her wealthy citizens enabled her to preserve, and hand down to distant ages with honour to architecture and the age. The works begun by the Midland Railway Company (which we described at length in these pages) will facilitate the trade and inland traffic of the country. The works in themselves, as a piece of engineering, are successful and praiseworthy. In ecclesiastical architecture, some minor structures have been all but completed, and others are still in course of erection, in the city and provinces, which it would be premature yet to describe; but we have a belief that they will afford evidence, when complete, of the growing architectural taste of this nation.

In the matter of improved labourers' and workmen's dwellings, we have already recorded some instances on the estate of his Grace the Duke of Leinster, and some others in the north of Ireland; and later again we favourably alluded to others for which prizes were awarded by the Royal Agricultural Society of Ireland. Some of these latter were built with concrete—a material which we felt bound to recommend, and which we still think is capable of being utilized to a great extent in Ireland. Concrete, when judiciously employed and properly made and manipulated, is an admirable material for labourers' houses and farm-buildings or out-houses. It is economical, and it affords a warm and durable dwelling.

In the matter of engineering projects, several have been projected during the last year, principally in connection with railway enterprise, but each will necessarily tend to the development of other industrial resources in the country. Prudent railway schemes are to be encouraged and commended, altho' on the score of railway success we have had some schemes which proved the very reverse, and which has led a great body of our people to advocate the Government purchase of the Irish railway system. Pending such a purchase—which is likely to take place sooner or later,—there is no reason why we should not wish an extension of our lines, for the sake of turning to account the mineral wealth of the country.

The labour market has been violently disturbed during the preceding year, and a series of remarkable strikes has taken place in the sister kingdoms, the most protracted being that of the building trades in London. The agricultural labourers and the colliers and miners have also figured prominently, and there is reason to fear that during the present year we will see a succession of great strikes and locks-out. The workmen have obtained advantages, but it will depend on the briskness of the demand for labour whether these advantages can be upheld for any length of time. We are no advocates for cheap labour, for cheap labour is an anomaly while the cost of living rates so high as it has during the last few years, affording a justification to our workmen to seek an advance of wages. Ireland has not suffered to any great extent by strikes during the year of 1872. The disruptions in this country were of a trivial kind compared with those across the Channel. We have had a builders' strike in Belfast, and a bakers' strike in Dublin, and some minor strikes elsewhere in the provinces, but the differences arising were amicably adjusted after a few days' duration. The relations between capital and labour are undergoing mighty changes, and the co-operative principle is undoubtedly taking root in the British Islands. With the aid of friendly, benefit, sick and assurance, building benefit, and other forms of co-operative societies, the workmen of Great Britain are yearly growing into a formidable power. Associated labour creates capital, and the investments of the industrial classes may be said to count at present by millions. If this new industrial development is wisely utilized, the face of society in a generation or two will be changed for the better. Many deep and solemn problems underlie the crust of society connected with the elevation of labour, and it behoves both our statesmen and clergymen of every denomination to realise their position, and act with a consciousness of the profound and serious transitions that are taking place. The current

must be stemmed with a steady and cautious hand. Science and divine truths must not be allowed to violently clash, or anarchy, instead of industry and peace, will create wreck and ruin. We do not fear the triumphs of science, but we dread an educated barbarism more than a savage ignorance. Civilization is not merely the acme of school or collegiate knowledge—it embodies reason and prudence, as well as learning.

The dearness and cost of coal during the last year have roused a national interest in our native coal beds, and much discussion has taken place thereon. As far as investigations have taken place respecting our coal fields, satisfactory proofs have been afforded that they can be worked with profit, and that coal can be supplied to our citizens at prices much under that of the imported article.

One of the latest engineering projects announced is the proposed Wexford and Waterford line, which will necessitate also some engineering work at Rosslare Harbour. When these works are complete, if all turns out well, there will be a shorter line of communication with England, to the benefit of the trade of both countries.

It is hardly necessary to do more than merely allude to the works connected with the improvement of the Liffey and the Harbour of Dublin—so long projected and so long in hands. That part of the engineering enterprise which devolves upon the Corporation of Dublin drags its slow length along, and it is more a work of promise than of performance. Essex and Carlisle bridges are still untouched, and we are not sanguine as to the date at which these necessary improvements will even begin, leaving out of question the period of their supposed completion.

In the chief cities of the four provinces we chronicled during the year some minor local works, which have added much to the improvement of the respective localities in which they have been executed, notably in Cork and Belfast, and harbour as well as town improvements are taking place both in the north and south of the country.

The sanitary question—a question which we have never ceased to advocate—has received an impetus during the last year in this city by the establishment of a Sanitary Association, which has, to do it justice, led to some reform. The work of voluntary inspection is a noble work to undertake, but, from its very nature, of course it must be partial and restricted. The action of the Sanitary Association ought to have made our Corporation, for its own credit's sake, move to some purpose, but we regret to say it begot but little activity, and with that body matters go on pretty much as they have gone on for the last ten years. Although the Corporation have neglected the streets and drainage of the city, in the matter of adulteration

there has been some commendable activity shown. Many vendors of diseased meat and nefarious adulterators of food and drink have been properly but not severely punished, and light weights and measures have been seized. In this work, as far as it has been performed, the officials of the Corporation have but strictly performed their duty. A large field, however, remains open for the exercise of their duties which will need to be attended to during the present year. In Kingstown and other Dublin townships, sanitary matters have received and are receiving attention, and we will not fail to record the progress of each in the future.

In connection with the administration of the Irish Board of Works and Civil Service Departments in this country, a Commission was lately appointed to investigate the grievances loudly and justly complained of. This Commission has, after a short enquiry, lately terminated its labours. We very much fear that the Commission will be productive of no good, and that an enquiry is in store for the Civil Service staff in this country. Respecting the legislative measures of last session of Parliament having a bearing upon the social and moral progress of the people, are the Ballot Act, the Public Health Act, and the Licensing Act. The Public Health Act is, however, one that concerns us most. As a practical measure of legislation, the Mines Regulation Bill of last session will do an immensity of good. Among the legislative acts of last session specially relating to this country were two measures intended to effect reform—the Grand Jury Presentments and the County Officers' Bills. The Corrupt Practices at Municipal Elections Bill will have its application to this country also, and it is needed. The benefit of the mining acts passed last session will, in course of time, be felt in this country; but the mining interest—workmen as well as owners—will need other measures for their protection. The Public Health Act is only a preliminary and temporary measure, but, such as it is, we think it will be productive of a large amount of good. It aims to reform or re-organise local sanitary authorities, and provides a continual check upon their actions. Neglect on the one hand—which may either take place through parsimony or illegal expenditure,—and expenditure misdirected, will be looked after, and both the ratepayers and their representatives will be held amenable in many matters. In Dublin at least, sanitary neglect has not arisen through the parsimony of the ratepayers: the citizens are at present paying more than they are able to afford, through ill-advised and ruinous local measures. The Public Health Act aims to raise the system of sanitary efficiency to its highest level; but a long time will, we fear, have to elapse before that is accomplished throughout the British Islands. We will need yet three or four more exhaustive measures to regulate sanitary administration and free it from the obvious hitches that are taking place, and must as a matter of course still take place while mere tentative acts are in operation.

Our yearly agricultural shows—those of the Royal Dublin Society,—at which cattle as well as implements are exhibited, tend to further the advancement of the national prosperity of the country and its industrial arts, and the latest exhibition was on a par with some former ones.

Our learned societies are still engaged, on the part of several of their members, in con-

tributing papers to the circle of the sciences, and maintain in many particulars their olden prestige. The Royal Irish Academy, the Royal Dublin Society, the Royal Hibernian Academy, the Royal Historical and Archaeological Association of Ireland, Trinity College Historical Society, the Royal Institute of Architects, and the Junior Architectural Association are each in their respective spheres doing a great amount of good. We hope that the present year will illustrate the usefulness of the latest formation in the interest of architecture.

The Schools of Art, in Dublin, Belfast, Cork, and other places in Ireland, have, during the last year, shown a marked advance; and the masters of the Dublin and Belfast schools have been awarded prizes for the efficiency of their teaching and school administration. It is to be hoped that this good and cheering work will continue.

The preservation of our national monuments is receiving the special attention of the Royal Archaeological Society, and it has also received the attention of members of our architectural and engineering bodies during the past year.

In the very vital and important matter of elementary and technical education there is much work which needs to be done in this country. The children of our working classes have not yet the facilities which youth have in the sister kingdom, and religious and party warfare too often intervene in this island to the delay of pressing reform. More exhibitions, more schools of art, more teachers, and more scholars, are things that we would like to see. The sister kingdom is imitating and wisely following the wake of foreign countries in establishing technical schools and workshops for her rising generation of artists and craftsmen; and in the Crystal Palace, London, there will soon be established schools and workshops which will yet, we hope, confer incalculable benefit on the country. In this city, yea, in every province of the country, we require such schools. With the aid of such schools and the aid of our ordinary schools of art, handicrafts will be perfected, and there will be no need of sending to foreign nations for what can be produced as well at home. With a good technical education our craftsmen will become better workmen, and the arts and manufactures will consequently be improved. Our workmen in nearly all branches of trade are ignorant of the principles of their trades, and have little conception of the principles of design. Artistic and technical instruction will create in this island new trades, and restore those that for many years have ceased to exist. Carpet-making has improved here since art-instruction has been systematically taught; so have various other branches of trade, such as glass-making and silvering, marble-working, implement-making, linen manufacture, paper and perfumery, woollen manufacture, furniture and ecclesiastical workmanship, and several other branches. Education in its most extended sense is necessary, that Ireland may improve. We do not under-estimate the value of public lectures as means to an end, and we may instance here that some very valuable lectures on the public health or sanitary education were delivered during the past year by Professor Cameron and Dr. O'Leary, and we are certain that they accomplished much good.

The Presidents of the Institute of Architects and of the Junior Association delivered

very instructive addresses at the opening of the sessions of both bodies, and we published in these columns some months ago a valuable address on the "Profession and Practice of Engineering in Ireland," by Mr. Bindon Stoney, which was well worth the deep attention of the younger members of both the architectural and engineering institutes.

This country has lost, during the late year, some few members of the architectural body who were well known and respected in this city—Mr. W. F. Caldbeck, and Mr. C. D. Astley, of the Board of Works. Art circles lost an old and valued member in Mr. Catterson Smith, a past president of the Royal Hibernian Academy. Nor must we omit the mention of one who, though not an artist or an architect, yet had claims upon both—Charles Lever. Our great Irish novelist was the son of a Dublin builder, and by his writings he has erected for himself a niche in the hearts of his countrymen which will preserve his memory intact.

We have so often pointed out during the past year the necessary work that the city particularly requires, that we might well stand excused from reverting to it again. Our most urgent wants in the city for the future hinge on sanitary reform, public gardens, free libraries, the opening of the public squares, public baths in the city. Proper swimming places are also needed outside the city, on the north and south sides. We noticed during the late year that a portion of the Press in this city, and of the provincial Press, had bestowed a little more attention to sanitary matters than formerly. By doing so they have acted wisely, and helped on the reform that we all desire to see. Some provincial towns are in advance of this city in public spirit and sanitary performance.

Our duty in the future will not be relaxed in dragging to light every public abuse, and pointing out the remedy to the best of our abilities. It is no easy task to steer an independent course in this country. Abuses must be put down, even though vested interests stand in the way. Our standard will still be, as in the past, the common weal, irrespective of creed or party. We care not what may be the religious or political hue of public men. If they should stand in the way of public improvement, they must bear the brunt of criticism, or retire into private life, that more honest or useful men may take their places.

The Year commences full of prospects and big with hopes, and as far as our professional constituency is concerned, we promise to afford a faithful representation throughout the year, and render this Journal worthy of the growing confidence reposed in its advocacy, on the part of its supporters at home and abroad.

IRISH BUILDER Office,
January 1st, 1873.

BUILDING AND ORNAMENTAL STONES.*

FIRST NOTICE.

A WORK on building and ornamental stones, from an architectural point of view, was a book to be desired. Professor Hull has made a very successful attempt in supplying an acknowledged want, and in more than one particular the subject was suited to the man, and the man to the subject. The work before us suggests many considerations—in

* "A Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries." By Edward Hull, M.A., F.R.S. London: Macmillan and Co.

fact, so many, that another and much larger volume might be usefully written by way of observation on the present work. Though dealing with the building stones of the British islands as a whole, and of foreign countries, the treatise, as far as it relates to Ireland, will have a peculiar attractiveness for native readers, who are interested in the mineral and industrial resources of this island. The field which the Director of the Geological Survey of Ireland entered was not wholly untrodden, for, during the last three centuries or nearly, partial and creditable attempts have been made to throw some light on the subject. The difficulties, however, were great, and as the investigations were not pursued on a scientific basis, the success was but partial and unsatisfactory. Boate, in his "Natural History (so-called) of Ireland," furnishes some scant particulars of our mineralogy, and some of his statements were long afterwards confirmed by Kirwan. Peter Lombard, Primate of Armagh, in his work, "De Regno Hiberniæ Sanctorum Insula," &c., published at Louvain in 1632 (after the primate's death), gives also some few particulars of our mineralogical resources.

Dr. John Rutt, a Dublin physician, in 1772 published an "Essay towards a Natural History of the County Dublin," in two volumes, 8vo. This work though confined to Dublin, considered in respect to its time, was a most useful work, as it furnished a large body of information respecting the mineralogical resources of the county—ores, clays, and building stones, and their several localities. Rutt undertook his task at the request of the Physico-Historical Society, at the head of which was Lord Chancellor Jocelyn. Owing to the influence of this society and its patrons, several natural and civil local histories were produced, among which were those of Down, Waterford, Cork, Kerry, and Dublin. Some years later the valuable and scientific work of Richard Kirwan, F.R.S., and M.R.I.A., appeared, entitled "Elements of Mineralogy." Kirwan treated his subject in a truly scientific and practical manner, and was one of the first, if not the very first, in the British Islands who reduced the wide subject of mineralogy to a science. Minerals, in the opinion of Kirwan, were not only such substances as are found in mines, such as metals, semi-metals, sulphur, and salts, but that they denoted all fossils that did not either belong to the vegetable or animal kingdom, consequently stones and earths were properly placed by Kirwan in the mineral kingdom, and subjected to chemical analysis and treated on a chemical basis. Kirwan treated of the properties of granites, limestones, and sandstones, and he distinguished the common and well-known black building stone of Dublin under the term of Calp. This calp or black quarry stone of Dublin he placed under the argillaceous genus. The Hon. George Knox, M.R.I.A., contributed a paper to the academy, "Observations on Calp," in which he says "the quantity of argil, however, which its chemical analysis discovers would scarcely, were its internal properties to determine its class, entitle it to rank in that which Mr. Kirwan assigned to it." According to Mr. Knox, the chemical analysis of the black quarry building stone or calp of Dublin is as follows:—Carbonate of lime, 68; oxide of iron, 2; argil, 7½; silice, 18; carbon and bitumen, 8; water, 1½. One hundred parts contained the above substances in nearly the

proportions given. It may be stated here that the calp or black building stone of the County Dublin varies in qualities to a great extent, from rottenness to extreme hardness. Some very good descriptions of this black hewn stone may be seen in many of our public buildings in this city, and it has stood the atmosphere well. In speaking of minerals, we might have stated that the first series, consisting of one hundred specimens, were collected and presented by Robert Blake, M.D., to the Dublin Society at the close of the last or beginning of the present century. These are in the museum, and a number of them are beautiful specimens of our Dublin granites and limestones. These hundred specimens were intended by Mr. Blake to form an outline of the mineralogy of the County of Dublin and its vicinity.

We often wondered very much why the hints given by Rutt in 1772 remained so long unavailed of. He furnished, indeed, a large list of the old quarries of this county, some of which had formerly been worked, but had ceased in his time from the growth of the city. The following extract will probably interest the Dublin reader:—"On the east side of the city, near Stephen's-green, is a quarry, which (A.D. 1763) has been opened twelve years, and has enriched its proprietor, consisting of a grey stone like that of Cursis Stream, being the *Saxum durissimum cauleum* of Emanuel Costa; the strata are almost parallel to the horizon. Here are also flags and hearthstones, and under the above-named is a layer of limestone."

The most noted quarry in the county in Rutt's time was at Cursis Stream, "a dark grey or black sort of stone." It was not much used in building, except for common walling. It was wrought, however, into beautiful chimney-pieces, and it was not considered much inferior to marble. This quarry, according to Rutt, supplied black flags for flooring, hearthstones, stones for peirs, headstones, tombstones, &c. These stones were smoothed with Wicklow sand and water. The stone at Cursis Stream was nothing more, according to Kirwan, than calp, and is peculiar to this county, and an instance was given of one of these stones standing for upwards of one hundred years in St. Michan's Church without scaling. Spars and crystals are found adhering to this black building stone in connection with various County Dublin quarries, and the existence of pyrites in connexion with a large quantity of this stone is common, and mica is sometimes found interspersed.

Along the River Dodder there were formerly worked some good descriptions of our black building stone. There are stones here which were considered the hardest of any in the county, and harder than many marbles. This Dodder stone possessed the properties of other limestones of hardening when exposed to the weather. The old spire of St. Patrick's Cathedral was said to be built with this black stone, raised from a quarry known in the last century as beside Smith's Mills, situate on Stubbin's land.

At Red-Cow, near Dublin, there are stones of hard and flinty quality. A quarry here in the last century was celebrated for its admirable hearthstones, tombstones, and flags; and a common report existed that the steps going up to St. Paul's Cathedral, London, were procured from the quarry at Red-Cow.

Granite—which in the opinion of Professor Hull is "the noblest of all rocks," and which no one can with reason dispute—is to be

found in abundance throughout Ireland: indeed this country may be said with truth to rest on one entire bed of granite. Limestone, too, is plentiful, and we believe it is to be found in every county, with the exception of Wicklow, Wexford, Tyrone, and Antrim. At one time in this city it was thought that granite would have entirely supplanted the use of Portland stone, but fashion on the one side, and considerations which always weigh with architects and builders, induced a preference for the limestone, because it could be worked more easily and was more suitable for ornamental or sculptural enrichments. Granite, when first quarried, is much softer; it also hardens like soft limestone on exposure to the air. Granite is susceptible of being worked at our quarries into all shapes with chisel, hammer, and mallet. It is not suited for Gothic ornamentation when sharp arrises or under-cut work is required; but where a broad treatment is determined upon, granite will be found to be a stone well suited to give good results, always presupposing the work is committed to the hands of skilful and experienced workmen. For the ordinary work of window-jambes, sills, lintels, door-jambes, columns, troughs, pedestals, mortars, obelisks, piers, breakwaters, forts, casements, or domestic chimney-pieces, granite will be found to meet all requirements. Where needed for highly ornamental purposes, a polish is indispensable, and granite is susceptible of a fine and lasting polish. The polishing process is more expensive by far than that of marble. The spire of the present steeple of St. Patrick's is built of Dublin granite; so is a portion of Essex and other bridges, and the piers at Wicklow and Kingstown. The General Post Office,—with the exception of the portico, which is of Portland stone—is of our mountain granite, and so are several of the fronts of our old public buildings and noblemen's mansions in this city. Let any of these old fronts be examined to-day, and they will give proof of the durable quality of the granites that compose them.

Kane, in his "Industrial Resources of Ireland," gives a good deal of information about our native marbles, which are, in fact, limestones; and Mr. G. Wilkinson, in his admirable book on the "Ancient Architecture and Practical Geology of Ireland," affords a valuable insight into the geological formation and distribution of our building and ornamental stones. Professor Hull does not forget to acknowledge his indebtedness to the above works, and more particularly to the latter writer. Professor Hull enumerates the marble districts of Ireland, and points out those suited for decorative work. We do not see the name of Dublin mentioned as a county producing marble, though we believe it is beyond any doubt there is a quantity of marble in this county, although it is not considerable. Dr. Rutt, in the last century, says that it is to be found among the limestones at Howth and Raheny, and at Kinsealy there was said to be an excellent bed. At Loughshinny there was a quarry where some of the marbles were said to have petrified shells incorporated with them. Marble was also found at Donabate, Clonskeagh Bridge, and at Robbs Walls, on the coast between Portmarnock and Malahide. Dr. Rutt mentions that a Mr. Richard Talbot shewed him "a sample of black marble variegated with white from a large quarry of it at Malahide, which takes a fine polish, and is little inferior to the Kilkenny marble."

The north side of Dublin has an abundance of limestones of different degrees of hardness, and doubtless here a quantity of marble exists. At Sutton there is a hard quality of limestone approaching to marble; it was used formerly for the purpose of cement, as it made a very strong description like terras for hydraulic work. Carlow was reputed some years ago to have one of the best limestones in Ireland, and Rutty was informed in his time that the Dutch were so well acquainted with the excellence of Irish limes as to have imported it from hence.

Professor Hull's work is so suggestive of national considerations that we have irresistibly been led to dilate upon the Irish aspect of his work, to the exclusion of other important matters. We will take up the question in another paper, and endeavour to do justice to the work, which is not an ordinary one. In the meantime we commend the treatise to the attention of all those who have an intimate or remote connection with the building or engineering world, or to the mere student of nature and art who may love the subject treated of for its own sake, and there ought to be even many of these in this island.

NOTES ON THE ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

CASHEL—continued.

Masonry.—The masonry of this building is of a very superior character; the material, a hard close-grained sandstone, originally of a light brown or buff colour, but now shewing gray and reddish tints from the growth of lichen, &c. I would here remark that the Cathedral and all the mediæval buildings are erected of the limestone rock on which they stand, the Round Tower and Cormac's Chapel alone being built of freestone. The material is laid in courses of small ashlar, varying from 6 in. to 9 in. in height, neatly dressed on the face, and truly squared on beds and joints, laid very close, with little mortar. In truth, I have seldom seen a better executed piece of masonry, despite the weather-wear of over seven hundred years. The character of the work is particularly observable at the north side, which has had the shelter of the chancel wall, and also in the interior of the towers, which are as carefully finished as the outside, and looks as if the masons had only struck their scaffolds. Here the faces of the blocks are chiselled diagonally from angle to angle, and not vertically or horizontally, as in modern work.

The roofs of nave, chancel, and sub-chancel are entirely constructed of stone; they have somewhat more than an equilateral pitch, and the lines of each roof have been kept parallel so as to produce symmetry in the barge-courses. The outer casing is composed of good-sized blocks of ashlar, breaking joint, and so carefully bedded as to have been impervious to moisture. This roof is a triumph of constructive skill. It could not be supposed that a right-lined stone covering of the span and great weight of this roof could sustain itself like the stone roof of the chancel of St. Molua's Church, near Killaloe (see p. 23, vol. xiv.), accordingly we find that it is supported by an internal arch of an acutely-pointed form—a perfect Gothic arch, constructed between A.D. 1127 and 1134, long before such a feature was known in the sister island: an examination of the section of this building on lithograph illustrates this fact. These supporting arches are not built either of sandstone or limestone, but of small cubical blocks of a hard but light and porous material, known as calc-tuffa. Where this was procured, I am at a loss to conjecture; I am not aware of the existence of any deposit of such a material in this country,

and must therefore presume that it was an imported article. If such be the case, Irish commerce embraced a greater variety of foreign products than we have hitherto considered probable. We have ample evidence that at as early an age Caen stone was imported by Irish builders, for mouldings and carved work, into districts which did not produce freestone.

The roof of the north tower is also constructed of blocks of ashlar; it is a high-pitched pyramid, springing from a projecting eave-course, and is in good preservation, excepting a couple of stones at the apex. The roofs of the north porch and the recess adjoining are also of stone, as I have before remarked.

Interior.—The nave is 30 ft. in length and 18 ft. in breadth. It is spanned by a barrel vault, having plain ribs springing from the capitals of the columns on the flank walls. These latter are arcaded in the following manner:—The lower storey consists of a series of rectangular piers supporting semicircular arches, and forming deeply-recessed panels between; the piers have caps, composed of a deep square, with a billet ornament under same; the surface of these piers, on fronts and sides, are richly diapered with a variety of incised ornament. The arches, both on faces and soffets, are enriched with chevrons. Above these arches is a deep string-course, consisting of a square and chamfer; resting on this we have at each side an arcade of stout three-quarter columns, having moulded bases and carved capitals, from which spring the rectangular ribs of the barrel vault. The capitals have a deep abacus consisting of a square and chamfer, the bells being carved in a variety of design, no two being similar; five of these are shewn on lithograph.

The nave was lighted by two window-opes at the south side, the internal jambs and arches of which remain, but the external opes have been cut away and formed into rude square apertures. There was also a window-ope in the west gable. These appear to have been all the original provision made for lighting the nave, which must have been very dark.

At the north side of nave, close to east gable, is a very elaborate doorway leading into the ground floor of the north tower; it appears to be a feature far in excess of its intended use, being of large size, richly ornamented with several orders of carved arch-members, springing from jamb pillars having carved capitals, the shafts of which are detached, and octagonal in section, each of the sides being hollowed or fluted. The door-ope has been much narrowed by the insertion of chamfered piers of limestone. The exterior moulded arch-member being thrown above the string-course of the lower storey of the arcading, the work over it is stepped, and the column of the upper arcade which comes right over the centre of the arch is shortened to meet the difficulty. In the south wall is a corresponding door leading to the south tower; it is of small size, plain and unornamented.

The chancel shews an inexplicable peculiarity: it is not in the centre of the east gable of nave,—on the contrary, it has been placed as close to the south wall as it could be. From a thorough examination of the building, I have failed to ascertain the reason of this strange proceeding; I can only conjecture that, when this edifice was erecting, a more ancient church or oratory was in existence, and that the chancel of the new church was pushed on one side to avoid the removal of what may have then been an object of great reverence, though subsequently taken down to make room for the Cathedral. This, of course, is but a surmise; but such feelings dictated many of the strange anomalies we find in ancient buildings.

The Chancel.—The chancel is a very interesting feature; it is 18 ft. 8 in. in length, and 11 ft. 6 in. in breadth, clear of walls; it is groined by diagonal ribs, moulded, their intersection being covered by a group of four human heads. The north and south walls

have arcades of arches, supported on three-quarter columns, with bases and carved capitals. It is lighted by small semicircular-headed windows in north and south walls, having large inward splays. There was no east window, consequently the chancel was badly lighted.

The east end shews a double recess, the external one nearly the full breadth of chancel, and having a moulded arch springing from double columns at each side; the key-stone is a grotesque human head, and immediately over it is a line of five of the same character. The inner recess is 5 ft. wide and 3 ft. 8 in. in depth; it has a feature in the character of a reredos, being an arcade of three small arched recesses, the arch members moulded and springing from three-quarter shafts, having scalloped capitals and curiously-moulded bases. Over this arcade is a string-course enriched with the billet and supported at intervals by human heads; this arcade is continued on the sides of the recess, and on to the north and south walls of chancel. The shafts of the pillars in the recess are enriched with the chevron and other ornaments.

Dr. Petrie states that "the whole of the vaulted roof, as well as the sides of the chancel, appear to have been richly pointed in fresco, in which the prevailing colours used were red, yellow, brown, and white. In the small side recesses curtains were represented, and arches were depicted on the ceiling. These frescoes are obviously contemporaneous with the building."

The extreme darkness of the chapel on the occasion of my visit did not reveal these frescoes to my sight; I have, however, no doubt of their existence, as I have seen traces of such decorations in other ancient buildings in Ireland.

The interior of the southern tower is occupied by a newel stairs to the height of the floor of chamber over nave; the angles of the tower being filled up with masonry to the height of the steps, it is circular so far, but from that upwards it is square. The steps are much worn and damaged.

At the head of this stairs is a door-ope leading to the chamber over the nave. This is a lofty apartment, being in length 27 ft. and in breadth 16 ft. 6 in., clear of walls; its height to the soffit of its acutely-pointed vaulting, which I have already described, is 21 ft. At the west end is a large recess for a fireplace, with a flue in the thickness of the gable; and at each side, nearly on a level with the hearth, is a rectangular flue which runs through the gable and along the flank wall, and opening into the towers; they are nearly on a level with the present floors. The object for which these air-passages were constructed has been variously surmised. Dr. Petrie considers them to have been flues for warming the apartment by heated air passing through them; but as there is about 12 in. of solid masonry between them and the chamber, their effect as a heating agent would be very trifling. A writer in the *Gentleman's Magazine*, who has given a pleasing account of Cashel, quotes the opinion of Mr. Gordon M. Hills, that they were not intended as flues, but had once been occupied by beams for bonding purposes, and which had decayed. It is, however, unlikely that the old Celtic masons would have inserted so perishable a material in the walls of an edifice built with such evident forethought for duration; surely when they constructed their very roofs of stone, they would not put timber in their walls. It is quite evident that not a cube foot of that material was used in the entire edifice, with the exception of the doors. Again, if bond timbers had been used, why connect them with both sides of a large fireplace? and why end them in the towers? Bond timbers, to be of any use, should be placed in the centre of the wall, and not near one of its faces. A practical eye will at once see that a bond piece could serve no useful purpose whatsoever in such a position, particularly where the walls are over 4 ft. in thickness. I think it more probable that the flues in question were formed for the purpose

of conveying currents of air under the huge fires that once filled the ample hearth—a contrivance still used by the peasantry in various parts of the country. The position of the flues on a level with the hearth favours this appropriation.

This chamber was originally lighted by two well-constructed rectangular opes in the stone roof, at the south side, the weatherings of which were contrived with skill and judgment; there were also two narrow, semicircular-headed slits in east gable. In the upper parts of both east and west gables are two rude opes of recent date. At a height of 7 ft. 2 in. from the floor there were ranges of corbels projecting internally from the stone roof,—four at one side, two at the other, still remaining.

The chamber over the chancel is entered by a door-ope in east gable of that over the nave; this ope is 2 ft. 7 in. wide, is semicircular-headed, and has a flight of six steps descending to the floor of the former, the difference of level being 5 ft. The wall is no less than 5 ft. 4 in. thick. The chamber is 12 ft. 8 in. square, and has a pointed vault of similar construction and materials to that over the nave; it is 14 ft. 6 in. in height. The provision for lighting was very limited, and has already been described.

I have thus endeavoured to picture this curious and interesting edifice, which must be seen and carefully studied to be appreciated. It is a lasting monument of the love of stone construction inherent in the old Celtic masons. I only wonder that the door-leaves were not slabs of stone, such as their ancestors constructed on the banks of the Nile and in the Giant Cities of Bashan.

The illustrations Nos. 1, 2, 3, 4, and 5 represent some of the capitals from the interior of nave; No. 6, the bases of coupled shafts from chancel arch; Nos. 7 and 8, terminations to label mouldings; No. 9, the exterior of one of the small circular opes lighting the chamber over the chancel. These are all taken from the drawings in Dr. Petrie's *Round Towers*, the first six being reduced to half-size. The accompanying lithograph shews an elevation of the southern side of the building, the damaged parts being restored. The tower is shewn with the modern storey removed, and its original stone roof restored.

I cannot close my account of this church without noticing the admirable manner in which Dr. Petrie has illustrated it. Though none of his drawings are done to scale, he has most faithfully rendered the details of the building. The *Gentleman's Magazine* for 1864 also contains an interesting account of this place, illustrated by some admirable drawings.

THE KINGSTOWN SEWERAGE.

WE have spoken of this projected sewerage scheme already, and what we have written has been wholly unbiased. We have no personal or ulterior interest to serve in the matter, nor do we desire to serve an individual or a party, to the injury of the community at large. We acknowledge, as all must, the necessity that exists for carrying out a practical and permanent system of sewerage for Kingstown and its vicinity, and our whole desire is to see it carried out in a commendable manner. We objected, and still object, to any system that would cast the whole of the sewage of Kingstown, Blackrock, or other of those marine townships into the Bay of Dublin unutilized. Independent of any provision being made for the utilization of the sewage, we are convinced that the sands, sea coast, harbours, and watering-places of Dublin, Kingstown, Bray, and other districts will suffer from the combined sewerage systems about to be carried out. Our fathers were wont to boast of the "velvet sands" around the coast of Dublin; but if our sewerage systems are carried out according to the original intentions, our children will be likely to curse the men who transformed those once "velvet sands" into

moving bogs of filth. The tide will not be more certain of returning than will a large body of the diluted filth that will be cast into our bay. Let no one imagine that the purifying capacity of the waters of our bay will be equal to the complement of foulness that will have to be absorbed or carried off.

We agree with those who demand a sewerage for Kingstown and its vicinity, but differ from them on the plan by which it is proposed to dispose of the sewage. Perhaps the spot chosen for the outfall is as good as could be made, and the line of sewerage equally good; but we dispute the judgment, reason, and common sense of the projectors, after all that is said, when we consider where all their labour ends. Let us suppose for the moment, in view of future sanitary enactments pending, that Kingstown was a far inland instead of a marine vicinity, would the projectors—not having the fear of God before their eyes or any concern for the law—rush heedless forward to the nearest river, and there find an outfall for their daring scheme? Would they not care something more than three brass pins whether they ran the risk of polluting the river? Would they look before they leaped, having a dread of the Local Government Board before their eyes, and a severe penalty which the ratepayers would have to make good? Seaboarders are thought to be very handy places for getting rid of the foulness of cities and towns. So think the Dublin and other corporations; but let the waterside residents of Kingstown and vicinity consider whether common sense if not science can serve them instead, and prevent them from being parties to a piece of folly which they will regret. If inland rivers are to be saved from pollution, so must tidal ones, and so also must harbours, bays, and watering-places.

The Chairman of the Kingstown Commissioners is a man whom we credit with much sagacity, business qualities, and who is possessed of more ordinary intelligence than is found in members of our local boards. He has placed a tolerably clear statement of the position and wants of Kingstown before the electors and ratepayers of that township. There are a few of his statements that we might fairly take objection to, but we shall not be captious, for we believe he means well, and, moreover, means what he says. Among the "obstructives," as they are called, of the present sewerage project for Kingstown are some men with whom we have no sympathy or faith, though there are others who are no doubt honest, but naturally biased in favour of their party.

When we wrote on a former occasion respecting the sewerage of Kingstown, we were not aware that any provision was made, or was intended to be made, for the utilization of the sewage; but we have been since informed that some few acres of ground are to be apportioned off in case a company or the commissioners may see that it is expedient to carry out a plan of utilization. Expediency in every age, unfortunately, has been found to be a very clever hack. We have very little faith in matters of expediency. Expediency has knocked kings and emperors from their thrones, and brought them back again amid the exclamations of the *vox populi*. Expediency has murdered some of the most noble projects that ever emanated from the brain of man, and a half a century later acknowledged its faults and endeavoured to breathe comfort into the dull cold ears of death. Expediency opposed railways, ocean steamers, the telegraph, and the tramways, which are now accomplished facts. Expediency butchered millions of human creatures because it despised the laws of prevention and glorified in the laws of cure. It was this same expediency that opposed the progress of sanitary science, and laughed at drainage, sewerage, utilization of sewage, and irrigation. We have men yet who go in for the pollution of our rivers as well as our homes, and hardly less censurable are those who, with open eyes, can see a virtue and an economy in flinging the foul yet valuable sewage of our cities and towns into our tidal

rivers, noble bays, and harbours. Is it because it is so handy to do it in various places in the kingdom that men are found so perverse in insisting to do it, and fools to acquiesce in its being done?

THE ANTIQUITY OF WOOLLEN MANUFACTURES IN IRELAND.

THERE is an ancient poem entitled "*Dittamondi*," written by a Florentine poet of the name of Fazio Delli Uberti (supposed date, 1364), in which the following passage occurs:

"*Similmente passamo en Irlanda
La qual fra nòle degna de fama
Per le nobile Sale che cimdanda.*"

Lord Charlemont, in a paper contributed to the first volume of the "*Transactions of the Royal Irish Academy*," draws attention to this passage, and translates it thus:—"In like manner we pass into Ireland, which among us is worthy of renown for the excellent serges that she sends us." His lordship concludes, from the incontrovertible testimony of the author, that Ireland was famous for her woollen manufactures before England. This *saia* is no doubt meant as serge, and it is described in the old dictionary of Della Crusca as answering to our serge. There is also a quotation given in this work from a very ancient Florentine account-book, in which a charge is made for a "*piece of saia* (serge) of Ireland." Lord Charlemont arrives at the conclusion that Irish serges were among the Italians an article of dress, and on further inquiry he says he finds in times very early indeed that this country was noted for its woollens, which were freely imported into England. In Madox's *History of the Exchequer* in relation to the reign of Henry III., one man accuses his partner in theft for having as his share a coat of Irish cloth. By a statute of Edward III., cloths termed frieze were made in Ireland, and declared duty free. In the year 1482 a licence was granted to the Pope's agents to export Irish woollens duty free, and by the 4th Edward no cloth except of *Ireland* or *Wales* may be imported into England.

Among Bishop Berkeley's "*Queries*" (now publishing in this journal) will be found the following query, in which the word *saies* occurs, intended of course for serge; it is, however, in relation to England:—"Whether the woollen manufacture of England is not divided into several parts or branches appropriated to particular places where they are only or principally manufactured—fine cloths in Somersetshire; coarse, in Yorkshire; long ells in Exeter; *saies* at Ludbury; crapes at Norwich; linseys at Kendal; blankets at Witney, and so forth." Since Berkeley's time some of these special manufactures have changed or have been transposed. There is coarse cloth now manufactured in Somersetshire as well as fine, and fine in Yorkshire as well as coarse; linseys are not confined to Kendal, or crapes to Norwich; and there are coat cloths as well as blankets to be found at Witney.

In Ireland, in the seventeenth and during the early part of the eighteenth century, there were several manufactures in existence connected with wearing apparel. Kilkenny was once famous for its blankets, and Bishop Berkeley asks, in 1735, "Whether we had not some years since a manufacture of hats at Athlone and of earthenware at Arklow, and what became of these manufactures?" Respecting earthenware, there was a manufactory early in the last century at Mullinahack, Dublin (city), where black crocks, pan-tiles, ridge-tiles, flower-pots, sugar moulds and drip-pots for sugar boilers were made. In 1745 Baldoyle clay was used for this purpose; potters' clay was supplied from Merriem and Clontarf, and the clays of Merriem and Baldoyle were mixed for making pitchers. Pantile clay was also formerly raised at Castle Kelly and Old Bawne. These last manufactures will, however, be treated of on another occasion, and their antiquity shewn to be in some instances perhaps older than that of the woollen manufacture of Ireland.

AIR-GAS LIGHT v. COAL-GAS.

It may interest the public to know that there is every likelihood that air-gas will very shortly supersede coal-gas, and that we shall have a purer, whiter, and more brilliant light for our dwellings and streets. On the score of cheapness also there will be a considerable saving. As far as we can perceive, nothing but ignorance and prejudice stand in the way. It would have been worth the while of our ratepayers, when called upon to accede to the purchase of the gas works in this city by our Corporation, to consider the future of air-gas. It would indeed have been well to have let the Alliance Company run to the end of their tether, and enjoy their monopoly as long as they could.

An exhibition of air-gas was recently made in London before a large and intelligent company. The invention is attributed to Messrs. Harrison, whose pneumatic looms in the South Kensington Museum are familiar to the visitors of that place. Some doubts and fears exist in people's minds respecting the permanent success likely to attend in burning hydro-carbons for general illuminating purposes. When one looks upon the destructive distillation of coal that goes on from year to year, it seems that the time has arrived for setting the matter at rest in respect to air-gas. Monopolies or legal difficulties should no longer be allowed to stand in the way. Our present gas is dear and bad, and the rapid consumption of our coal supply is a matter of most serious import. We hear that an Air-Gas Company is being formed, and the process put forward by this company seems to be simple and effective. The simple process shown by late experiments, namely, the manufacture of sufficient gas in a small gasometer to keep burning one argand lamp. In an ordinary glass jar was a quantity of fluid described as a compound of several hydro-carbon oils, in which was dissolved a certain proportion of kolkol gum. To this jar was fitted two tubes, one descending into the fluid and open at the top for the admission of the air of the atmosphere, the other entering only into the enclosed space above the fluid, and being in connection with the gasometer. The counterweights to the gasometer being heavier than the gasometer, it is gently raised when they are attached, and a vacuum in it is thus produced, causing the air to be sucked down the open tube, and to bubble up through the fluid mixture into the jar. The air thus becomes saturated with the hydro-carbon vapour and is the carrier of the illuminating gas. The gas so made is of the finest quality, and equal to sixty sperm candles of six to the pound, and burning in air under 8.10 inch of water pressure. A second quality of air-gas is made from the like solution without the kolkol, equal in luminosity to thirty candles, and a third quality, equal to twenty-eight candles, was shown constituted of an admixture of one-third air-gas, one-third coal-gas, and one-third of common air—this last indicating that air-gas might be advantageously used with common gas if the intimate connection of the hydro-carbon with the air can be permanently maintained. It is stated on this point that experiments have been made which go to prove that alterations of temperature and other causes that have interfered in previous efforts will not effect deterioration in the air-gas now presented to public notice. A long row of burners, some two or more dozen, were also kept supplied by a larger apparatus during the time of inspection, the air in this case being pumped through the fluid mixture or gazogen, as it is styled. It is said that the best quality of air-gas can be sold at 2s. per thousand cubic feet, and the second quality at something like 18d., the combustion being slower than that of coal-gas, and thus still further increasing the economy of the use of air-gas. Qualitative and quantitative analyses have been conducted by Mr. H. Childs, which give for No. 1 gas 16 per cent., and for No. 2. gas 14 per cent. of olefant gas, and indicate an absence of sulphuretted hydrogen and other

impurities present in ordinary coal-gas, and which exercise such a deleterious influence upon gilding and various delicate fabrics in domestic houses. The specific quantities given are—for No. 1 air-gas 0.968, for No. 2 air-gas 0.965, gravities much in excess of coal-gas, and which indicate that more pressure will consequently be required for transmission through pipes. The air-gas is not more open to explosion than ordinary gas, and can therefore be used with equal safety. The chairman of the company, Sir John Murray, made some remarks upon the value of the invention, and General Scott read a report, giving his opinion as to its valuable qualities and serviceableness, asserting at the conclusion of his address that the natural oils which form the basis of this product are obtainable in unlimited quantities in every part of the globe.

What a marked difference is there not between 30 or even 28 air-gas at 2s. per 1,000 ft., and the 16-candle gas of the Alliance and Consumers' Company, which, we are promised, will be only 4s. 6d. when it passes into the hands of the "wise and prudent men" of the Dublin Corporation!

CIVIC LYRICS.—No. XXVIII.

THE DEATH OF MACADAM.

A new Lord Mayor, a new Lord Mayor, a brand new year to crown

The joys that fall like flakes of snow on Dublin's dirty town !
The snow at least will give respite unto our civic digs,
Who murdered poor Macadam, and gave him to the pigs.

Ring out eighteen seventy-two, ring in seventy-three;
Let the joy-bells peal aloud, and let the beadies be
Pensioned off, for they have served Home Rulers well and
Whigs,
Who butchered poor Macadam, and gave him to the pigs.

To-night, at least, when turtle soup in aldermanic crops
Will not rest well with fish and fowl that's deluged with hot
drops.

Some folk will shake hands ere they part, who do not care
three figs

About each other or Macadam, though they love the pigs.

Home the happy family go—but hark ! what's that ahead ?
Rise up, consulting engineer ! the signal lights glare red !
Two tramway cars are on one line with thirty civic digs,
The butchers of Macadam, and the breeders of the pigs !

A Crash ! an Inquest ! and a Claim !—for which "the city pays,"
Because her evil-doers will not learn to mend their ways.
"Tis all the same in seven years," quoth Dr. Neville Briggs,
The witness in "Macadam v. the T.Cs. and the pigs."

THE SUMMING UP.

"The rats, my lord, are very small—not more than two feet
wide.

And eighteen inches deep at most: your lordship can decide."
"I will decide; I'll hear no more. And, hear me, civic digs,
I'll make you all pay through the nose, and ring you, like the
pigs." Civis.

THE CORPORATION AND THE GAS QUESTION.

It has not been all plain sailing with the parties to the purchase of the Gas Works in the Corporation. The proceedings of Monday's meeting have shown the outside view of the question. To the supply of gas to the citizens by Corporate authority, *per se*, there are no great objections to offer; but there are corporations and corporations, and the Dublin one is one of the most unfitted in the three kingdoms to undertake the management of our gas supply. We agree with the observations of Mr. Bridgeman and Mr. Dennehy in respect to the character and the integrity of our present municipal administration. We would have wished that the former gentleman had spoken his mind long since. Our Corporation is in sooth in the same rotten position as the municipal council of forty years since, and there is not the least doubt but the present project has begun and will end in jobbery. The final consideration of the purchase and its details is now referred to the joint consideration of a council representing the Corporation and the Chamber of Commerce. We have already expressed our opinion pretty plainly, and it is scarcely necessary for us at the present to dilate

further until we hear the issue of the joint conference that is about to take place. In conclusion, we may say here that the gas-fitting clause is a most unjust one, and would arbitrarily and ignominiously interfere with the business of legitimate traders and respectable citizens, who will be heavily taxed enough, if the bill passes, in having their interests destroyed without being made parties to its destruction.

CHAPEL OF PRESENTATION CONVENT, MULLINGAR.

THE Sisters of the Presentation Convent, Mullingar, are about to build a chapel in connection with their present house, from the designs of Mr. John P. Davis, architect. The new chapel is to stand detached from the present building, and be connected by a corridor, all of which have been approved of by the Right Rev. Dr. Nulty. With our present number is given a lithograph of the new building.

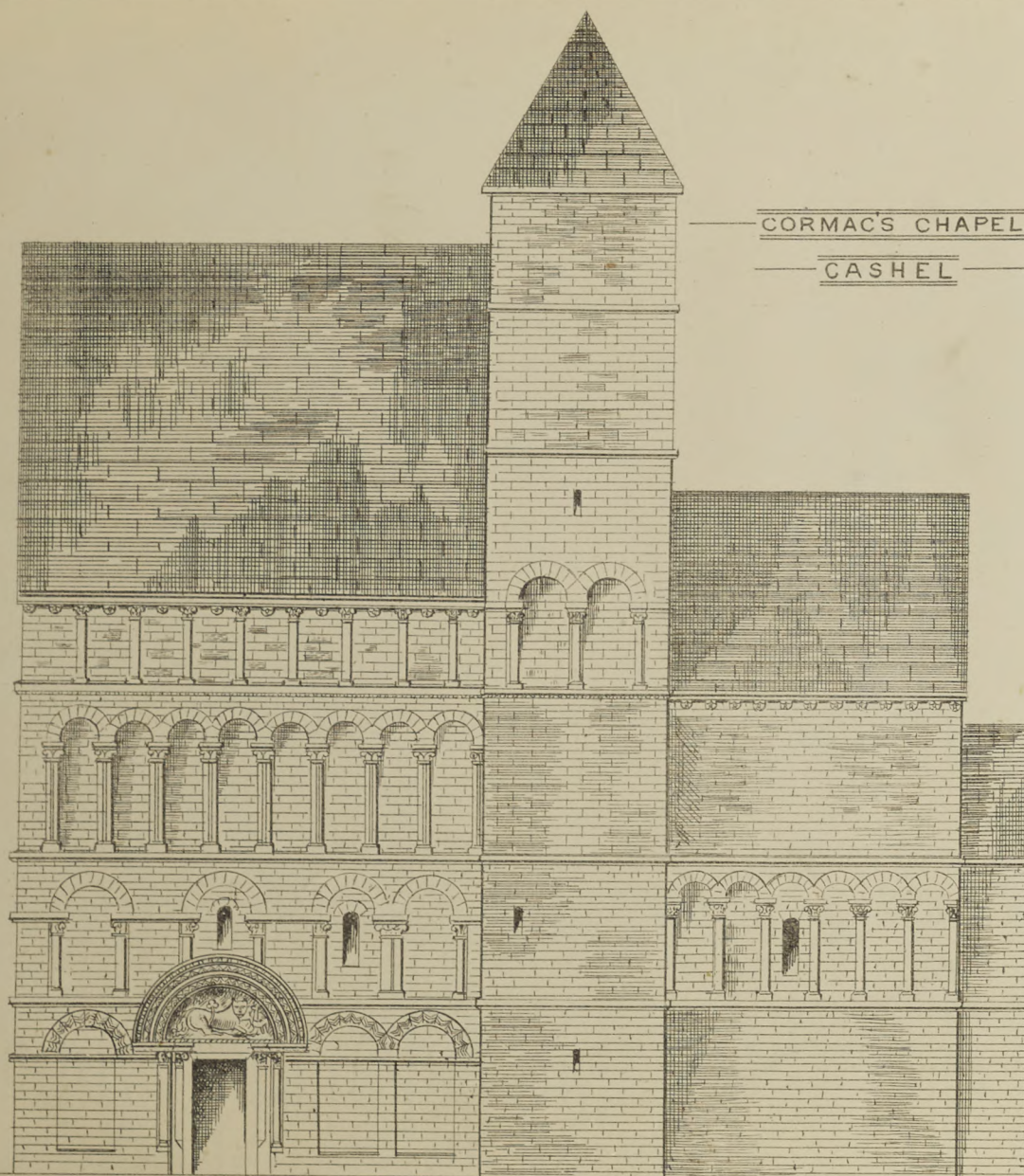
IMPROVEMENTS IN KINGSTOWN.

MR. John M'Evoy, the chairman of the Kingstown Commissioners, in his address and review of work done during his time of office, gives a clear and sober statement that merits public attention. We annex an extract from the first portion of his address, and we will afford room in our columns to such of his opponents and supporters as have aught to say, and can say it in a manner entitled to respect and consideration:—

THE BOARD OF 1872.

In a paper issued by me in December, 1871, it was stated that there were but sixteen meetings of the road and water, and nine of the sewer and market committee of that year. In the year now drawing to a close, there have been forty-six meetings of the road and water, and twenty-six of the sewer and public health committee, and the minutes of these meetings will be found, on examination, to cover very nearly as many pages of the minute-book as were covered by the minutes of previous road and sewer committees in *ten years*. This greatly increased attention to the public business has not been unproductive of good. The old rusty machinery has been put into somewhat better working order. The Nuisance Removal and Public Health Acts have been enforced with rigorous impartiality; pump wells, into which sewage runs, no longer poison the community; heaps of filth are no longer allowed to accumulate and remain in any part of the township; food adulterators are under supervision; twenty new lamps, in previously badly-lighted places, have been set up; for limestone or indurated mud, the hard Bray Head stone has been substituted on your roads; and for your footways, the Val de Travers Asphalt has been introduced; the time of the commissioners is no longer occupied with incessant disputes about the quantity of road material and other goods supplied, or in investigations into cases of alleged fraud; a system of check (to be improved upon by-and-by), has been established, under which the quantity of goods delivered being known, disputes and allegations of fraud have ceased to exist. The board of 1872 inherited from their predecessors a number of threatened actions—with their waterworks contractor, with a sewer contractor, with the parties interested in the long-pending but never-settled Kingstown-avenue Improvement, and with many others. The waterworks contractor has been settled with without litigation, by friendly conference, at which every just item of deduction was insisted upon and allowed to the township; the sewer contractor, litigating to the end, has been beaten, and for the first time in their history the Kingstown Commissioners have had a verdict in their favour from a jury in a court of law. Of the smaller actions, one in the Recorder's Court and two in Kilmainham, have been decided in favour of the commissioners. In one case only have the commissioners sustained a defeat—that is at the Kingstown Police Court, in the suit against them of the owner of the house in Glashule, where the election and adjourned election were held in January. The commissioners resisted payment for the two days; but on the evidence of Mr. John Reilly, ex-commissioner, who proved the double hiring, they were defeated, and

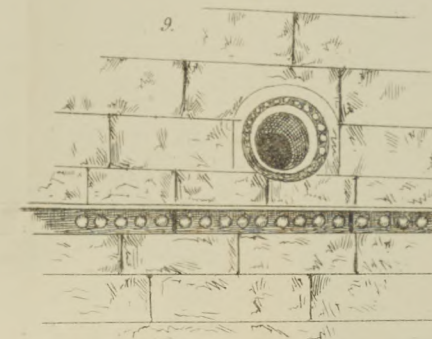
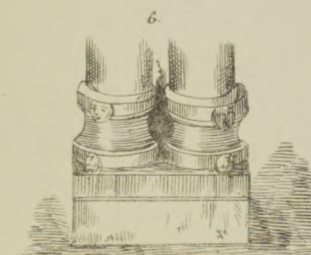
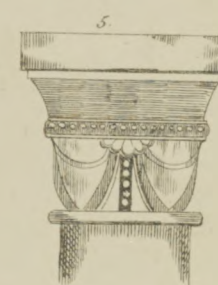
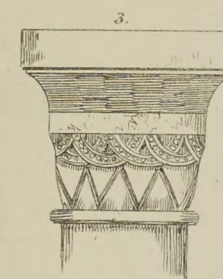
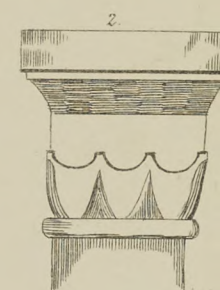
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SOUTH ELEVATION

DETAIL FROM CORMAC'S CHAPEL

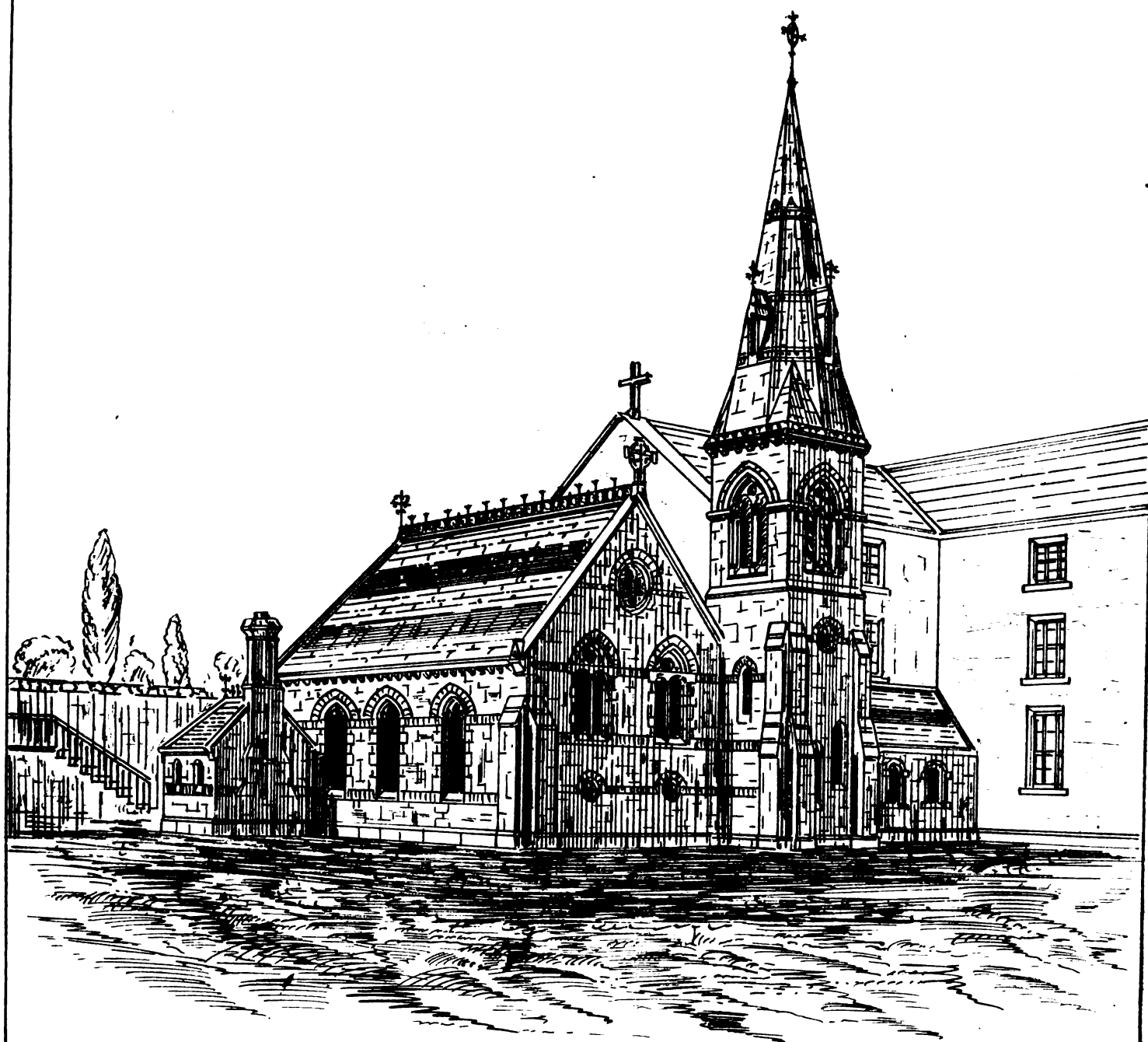
CASHEL



NEW CHAPEL AT PRESENTATION CONVENT

MULLINGAR

J. P. DEVIS ARCHT.



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with costs, *ten shillings*, demanded and paid to Mr. John Reilly, counsel as well as witness for the plaintiff.

THE SEWERAGE PROJECT.

But, however attentive to the public business the board of 1872 may be, it is not disposed to rush headlong into expensive projects, wholly unnecessary and uncalled for. Let the board be judged by the facts. In 1867 the commissioners of the time employed Mr. Palles, C.E., to report upon the sewerage of the township. That gentleman devoted five months to the work; and his report, published at the time, and re-published in *Saunders's News-Letter* of the 22nd October last, disclosed a state of things at once perilous to the public health and disgraceful to the commissioners and inhabitants of Kingstown. Mr. Palles, leaving shortly after for India, to fill an important position as a government engineer, the subject was dropped, and since little has been done to remedy the evils then so loudly condemned. The present state of things, according to a report of the town surveyor to the public health committee, is as follows:—In the Kingstown sewer district, out of 41,820 ft. of streets and roads, 17,700 is wholly unsewered, and 3,780 so badly sewered that new sewerage is required. In Glashule, out of 29,910 ft., 7,830 only is sewered. In Monkstown, out of 17,490 ft., 9,760 only is sewered; and for out-falls, the chief one is singularly placed between the ladies' and gentlemen's bathing place at Monkstown, and has deposited up to the present time nearly 2 ft. in depth of filth in and about those bathing places. Another outfall, recently constructed, is adjacent to the Royal Victoria Baths. Evidence has been tendered to the promoters of the new bill of a very decisive character as to the consequences to these baths of the proximity of this outfall. All along the fore-shore to Sandycove, filth is voided and left there, from minor drains and from the Glashule river, to the injury of house property, and to the annoyance of the inhabitants, as the promoters are in a position to prove. At Sandycove, following the strange rule of selecting the neighbourhood of bathing places as sewerage outlets, a pipe sewer has been laid across the harbour to discharge in front of the Sandycove bathing place. Evidence as to the injury to property in the neighbourhood from this sewer will be forthcoming.

CORRESPONDENCE.

TAXATION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—In an article in the *IRISH BUILDER*, dated December 15th, on the "Gas Question," the following sentence occurs:—"With a taxation of 10s. in the pound the city is in filth and decay, and a prey at any moment to a raging epidemic." Will you kindly inform me in your next issue how the 10s. of taxation is made up, as I am anxious to know if you include any items outside of those for which we are taxed here in Belfast, and which are as follows:—

General Purposes Rate	-	2s. 0d.
Police	"	2 0
Borough	"	0 4
Cemetery	"	0 1
		4 5
Add taxes not collected by the Corporation, as follows—		
Poor Rate	-	1 0
Water	"	1 2
		6 7

For houses of £20 valuation and under, the Police Rate is only 1s. in the pound, making the total rate for that class 5s. 7d.; and for the houses of £8 valuation and under, if the rate is paid in January there is a reduction of 25 per cent. off the General Purposes and Police Rates, making a still further reduction of 6d. off the one and 3d. off the other—total 9d., reducing the taxation of houses of £8 valuation and under to 4s. 10d. in the pound.

Your answer will not only oblige me, but perhaps convince some with whom I have conversed on the matter, and who do not think your statement correct.—Yours,
WILLIAM HARVEY.

Belfast, Dec. 20th, 1872.

[The taxation of Dublin is not far from 10s. in the pound, and if the present schemes projected by the jobbers in our Town Council are accomplished, our taxation will in all probability not only exceed 10s., but grow nearer to 12s. than to 10s. The rates and taxes of last year were apportioned as follows:—Main Drainage, 4d.; Sewer Rate, 4d.;

Police Tax, 8d.; Grand Jury Cess, 1s. 10d.; Poor Rate in North Dublin Union, 2s. 8d.; Improvement Rate, 2s.; Domestic Water Rate, 1s.; Public Water Rate, 3d. (payable in one sum); Bridge Tax, 2d. (also payable in one sum). The above taxes are payable in four instalments, on the 1st of January, March, June, and September respectively. The estimate for present year has reached us as we write. We learn from it that in the Grand Jury Cess there is a reduction of 1d., whilst the Poor-rate in North Union is increased by 4d. The total amount of taxation is therefore for this year at 9s. 7d. in the pound! The ratepayers of Belfast and County Antrim are to be congratulated, although the valuation on that district appears to be on a higher scale than other cities south. An abatement of 25 per cent. on taxes paid in advance, is a consideration no doubt duly appreciated by the thrifty denizens of the "Northern Athens." Should our correspondent visit our metropolis during the present year, it would add to his experience and information to spend a day or two in a personal inspection of the class of dwellings in the city and suburbs whose rental extends from £8 to £20. It would enable him to draw comparisons. A view of the general condition of our streets and their sanitary state would also ripen his knowledge, and enable him to see whether the pictures we have drawn, and the protests we have so often made, are well-founded. There are few, we think, but will candidly acknowledge that there is no justification except chronic Corporate extravagance and neglect for the high and ruinous taxation under which the citizens of Dublin suffer.—Ed. I. B.]

WHY HAVE WE NO GOOD STONE-CUTTERS?

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I was never any great use at the pen, although upon the "bank" I am looked up to as one who could say a word or two for myself and mates when occasion required. The statement made by Mr. Owen in his address to the Architects of Ireland, viz., that we have no "good stone-cutters," has occasioned me to ask myself, why? and after turning the subject over in my mind, I have come to the conclusion that the reason lies wholly and solely with the architects. It lies altogether with the architect to make good builders and good workmen; and until the latter are protected and encouraged, slop and jerry work will continue, to the disgrace of the profession. If my memory does not play me false I think I have read something in the pages of the *IRISH BUILDER*, from a Mr. Drew to the effect that the members of the new association of architects in Ireland, were about to begin to encourage the craftsman. God knows it is time (to use Mr. Owen's words) "to shake off the bonds of old associations and get rid of an empiricism that had become engendered in all our thoughts, habits, and practices." The "habit and practice" with most architects of the present day is to look upon the craftsman as an indispensable evil, and to rail at his failings, his ignorance, and prejudice, which are mainly the result of the neglect of the architect, who should protect him from the profit-grasping propensities of the mercenary builder, who cares for *neither* craftsman so long as he makes cent. per cent.

The dry-wall mason or road-contractor of to-day turns builder to-morrow, and if he have but the money or friends, his tender somehow will be accepted over those of men who were bred to the trade of building. Then watch him how he conducts the work. His aim is *solely* to put money in his purse, and so tricks the architect or buys him over. His next step is to pit his men one against the other, with the view of getting more work out of them than they are naturally able to perform, and then the architect and the workmen suffer—the former in the working out of his plans, and the latter in body and mind. Quantity is all this quack of a builder looks to, and, so long as he gets that, what does he care about architecture? Architects may blame workmen for not (to use their own words) infusing life and spirit into their designs,

but machining the work, &c. Cock them up with "life and spirit!" so long as the ex-road contractor has his way. Let him catch workmen at it, that's all. When I was serving my time I one day overheard a remark which will go to show how much architects are thought of by money-grubbing builders. The foreman, looking at the plans, exclaimed, "Oh! if I were let work that out properly, I'm the boy that would make a job of it." The builder (?), who came to the spot soon after, was asked by the foreman if he was to work according to the drawing. "Bah! never mind these men of paper, bust the cap o' your knee, boy; lie into it; do just as I told you, and never mind the plan." "Bust the cap o' your knee," and "Och, me sweet fellah," were favourite expressions with the employer when encouraging his men. Is it any wonder that we should have no good stone-cutters when such practices are allowed. Believe me, sir, until the architect recognises the working man as something more than the stone he works at, there will be no progress whatever.

Instead of the master and workman having common interests, as is advocated for the settlement of strikes, &c., it is the architect and artisan who ought to understand each other—the one as a designer and the other as the worker-out of that design. The builder can never properly be anything more than the lender of capital, who profits thereby. Ah, sir, were I used to writing I could a tale unfold that would throw a little light on stone-cutting business.

Not long ago I was on a job where the men were pitted against each other to such a degree that actual demoralisation—the beer-shop, &c., was the result. The overseer whispered to Paddy that Mick said he could do more than him, and cunningly gave to each a similar job; such was the system, and the motto of it, if there's blood in them they'll work. Were the stones neatly cut or mouldings truly wrought? If spawls were knocked off in the hurry, were they stuck on again with resin? Yes, to such an extent was the practice carried, that the men in their merrier moments would exclaim that there was more "stopping than stuff" in the building. Did the architect ever see the fire lit or the resin melting? Ah, no; he came, hoh-nobbed with the overseer, and went away without as much as a word of recognition to the men. It may be asked how the acts of the employer demoralised the men? By advancing them part of their wages two or three times a week, which was generally sought for no other purpose than to supply them with beer required to keep up steam. This system led to drinking every evening, and, as Mr. Owen hath it, spending their spare hours in the beer-shop. Then it went abroad that the stone-cutters were a drunken set—no good to be got of them, while the sleeveen who was the cause of all, besides getting more than a fair day's work, was thought to be in an unenviable position. The poor fellow! all he has to contend with in managing such men. Isn't he to be pitied, to be dealing with blackguards that won't work only in bits of days? But he was at no loss, for he only paid for the time worked.

In conclusion, sir, permit me to tell Mr. Owen, that a man can work six days, doing a fair day's work, and do it well each day; but when he "slushes" two days he is not able to go to work the third, and so takes to the beer shop. Ought not those of his profession look to this and make enquiries for themselves, if they would benefit the artisan or improve the system of carrying out their plans?
A STONECUTTER.

ACCIDENTS.

ON Tuesday a man engaged in quarrying stones at Bilberry Rock, Waterford, whilst suspended over a cliff by a rope, after excavating a block of over twelve hundred weight, unfortunately got disconnected from the rope and rolled down the rocks, a depth of 150 ft. When assistance arrived it was found that life was extinct. The deceased was a married man, and leaves a large family.

Three lives have been lost by the falling of a four-storied house at Youghal, which for a lengthened period has been in a state of extreme dilapidation. The owner is a lady named Howard, who has considerable property in the town. The jury in their verdict expressed the opinion that she had been guilty of the most wanton neglect. There are hundreds of tumble-down houses in our midst from which a similar calamity may not be unexpected. The "City Surveyor," where is he?

"THE QUERIST."

BY GEORGE BERKELEY, BISHOP OF CLOYNE.

(With Notes by "Dublinensis.")

"FIRST PUBLISHED A.D. MDCCLXXXV."

WHETHER he who is chained in a jail or dungeon hath not for the time lost his liberty? And, if so, whether temporary slavery be not already admitted amongst us?

Whether a state of servitude wherein he should be well worked, fed, and clothed, would not be a preferment to such a fellow? [A good many jail-birds have earned such preferment, and it seems to agree with their constitutions.]

Whether criminals in the freest country may not forfeit their liberty, and repair the damage they have done the public, by hard labour?

What the word servant signifies in the New Testament?

Whether the view of criminals chained in prison and kept at hard labour would not be very edifying to the multitude?

Whether the wants of such an institution be not plainly seen in England, where the disbelief of a future state hardeneth rogues against the fear of death, and where, through the great growth of robbers and house-breakers, it becomes every day more necessary?

Whether it be not easier to prevent than to remedy, and whether we should not profit by the example of others? [Our laws are not administered with a view to prevention. Inspection is carried on in a manner to encourage the perpetration of crime; punishment comes after their commission. When the causes of crimes are traced to their roots and removed, we will have less crimes and less criminals to punish.]

Whether felons are not often spared, and therefore encouraged, by the compassion of those who should prosecute them? [Yes, and the richer the felon may be, the more compassion is felt for him. The poor illiterate thief, who drew his first breath among thieves, and was dragged up with the same ignorance of religion as education, is trampled down without mercy or compassion, while the highly-educated criminal, who cannot put in a plea of justification or palliation in any shape, is often pardoned or has his sentence commuted.]

Whether many that would not take away the life of a thief, may not nevertheless be willing to bring him to a more adequate punishment? [In Berkeley's time and for nearly a century later, men were hanged for stealing; but hanging for murder no more than for theft will deter men from committing the crime. Hanging is too good a punishment for murder. Indeed hanging is hardly a punishment at all, as it puts an abrupt end to the criminal's life; neither, in our opinion, is it useful as a deterrent. Capital punishment will probably be non-existent before the advent of the twentieth century in the British Islands. Penal servitude and hard work, with an application of the lash three or four times a-year during the term of a great criminal's imprisonment, would doubtless act as a greater deterrent than hanging. It would inspire at least a wholesome fear, and tend to keep would-be criminals from becoming ones.]

Whether the most indolent would be fond of idleness if they regarded it as the sure road to hard labour?

Whether the industry of the lower part of our people doth not much depend on the expense of the upper?

What would be the consequence if our gentry affected to distinguish themselves by fine houses rather than fine clothes? [Good housing is nearly as much a necessity as good clothing,—in fact it is a clothing or covering, and we ardently wish our gentry and commonalty of the present day would not only affect, but really distinguish themselves by providing or living in decent houses.]

Whether any people in Europe are so meanly provided with houses and furniture in proportion to their incomes as the men of estates in Ireland? [There is a great im-

provement in this respect since Berkeley's time. Not only are men of estates, but many of the shopkeeping class have gone beyond their incomes in furnishing their houses to ape appearances. On the other hand, our working classes and labouring poor are the worst-provided for people in Christendom in regard to furniture.]

Whether building would not peculiarly encourage all other arts in this kingdom? [It has always done so, and will always have the effect of doing so.]

Whether smiths, masons, bricklayers, plasterers, carpenters, joiners, tylers, plumbers, and glaziers would not all find employment if the humour of building prevailed? [The answer to this query at this day as well as in the time of Bishop Berkeley must be self-evident.]

Whether the ornaments and furniture of a good house do not employ a number of artificers in iron, wood, marble, brass, pewter, copper, flax, wool, and divers other materials?

Whether in buildings and gardens a great number of day labourers do not find employment?

Whether by these means much of that sustenance and wealth of this nation which now goes to foreigners would not be kept at home, and nourish and circulate among our own people?

Whether, as industry produceth good living, the number of hands and mouths would not be increased, and, in proportion thereunto, whether there would not be every day more occasion for agriculture? And whether this article alone would not employ a world of people?

Whether such management would not equally provide for the magnificence of the rich and the necessities of the poor?

Whether an expense in building and improvements doth not remain at home, pass to the heir, and adorn the public? And whether any of these things can be said of claret? [Drinking claret, hock, sack, and several other foreign wines was indulged in to excess in the eighteenth century, and continued from Berkeley's time till the close of the century, every year increasing. After the Union, however, the consumption of wine decreased for nearly half a century. There is something to transmit to an heir by building and improvement, but by drinking there is nothing save beggary, ignorance, and disease.]

Whether fools do not make fashions, and wise men follow them? [Wise and shrewd men also invent and create fashions, and fools follow them until ruin overtakes them.]

Whether, for one who hurts his fortune by improvement, twenty do not ruin themselves by foreign luxury? [Improvements are always a benefit; and, though they may occasionally impoverish an owner, they ultimately enrich his heirs.]

Whether, in proportion as Ireland was improved and beautified by fine seats, the number of absentees would not decrease? [There were very few fine seats in Ireland in 1735, and absentees were numerous. Between 1782-1800 gentlemen's seats increased in every part of Ireland in beauty and improvement, and absentees decreased. We have absentees in hundreds, even now, who will never beautify their seats, nor remain at home to attend to the cultivation of the soil. They delegate their powers to others, and neglect follows neglect, until mortgages and incumbrances leave them not an acre of ground that they can rightly call their own.]

Whether he who employs men in buildings and manufactures doth not put life in the country, and whether the neighbourhood around him be not observed to thrive?

Whether money circulated by the landlord over lands, and among his own tenants, doth not return into his own pocket? [Certainly it does, but landlords cannot see it, nor will they, although they get a tangible evidence of it in their returns.]

Whether every acquire that made his domain swarm with busy hands, like a bee-hive or ant-hill, would not serve his own interest as well as that of his country?

Whether a gentleman who hath seen a little of the world, and observed how men lived elsewhere, can contentedly sit down in a cold and damp sordid habitation in the midst of a bleak country inhabited by thieves and beggars? [Many gentlemen have shewn that they can do such a thing; but, query are they gentlemen?]

Whether, on the other hand, a handsome seat amidst well-improved lands, fair villages, and a thriving neighbourhood, may not invite a man to dwell on his own estate, and quit the life of an unsuccessful saunterer about town for that of the useful country gentleman?

Whether it would not be of use and ornament if the towns throughout this kingdom were provided with decent churches, town-houses, work-houses, market-places, and paved streets, with some order taken for their cleanliness? [With respect to the two last matters, but particularly the last, Dublin stands in not much better position than she did in the days of Bishop Berkeley. The streets are nearly as bad as they were one hundred years ago, and a great number of them are not only ill-paved and ill-cleansed, but they are neither paved nor cleansed.]

Whether, if each of these towns were addicted to some peculiar manufacture, we should not find that the employing many hands together on the same work was the way to perfect our workmen? And whether all these things might not soon be provided by domestic industry, if money were not wanting?

Whether money could ever be wanting to the demands of industry, if we had a national bank?

Whether the fable of Hercules and the Carter ever suited any nation like this nation of Ireland? [If praying, begging, and beseeching would have elevated a nation, this country would have long since needed no industry. Her prayers, we fear, no more than her efforts, were neither ardent nor continued. The skies are still as high as ever, and the larks are in no danger of being caught.]

Whether if it be a new spectacle under the sun to behold, in such a climate and such a soil, and under such a gentle government, so many roads untrodden, fields untilled, houses desolate, and hands unemployed? [Goldsmith, were he alive, we fear he could still sing with much truth—

"Ill fares the land, to hastening ills a prey."

Millions of acres are still unreclaimed and waste, and millions more are no better than commons. Thousands of houses are not only desolate through emigration, but have disappeared through this and other causes, and some thousands of hands are unemployed or but casually employed. The Government might help, and possibly would help, if the landed proprietary would begin in earnest in opening fields of labour, which would certainly result to their own great profit.]

Whether there is any country in Christendom, either kingdom or republic, depending or independent, free or enslaved, which may not afford us a useful lesson? [Every nation may afford us a lesson, and certainly we afford a lesson to other nations which they will scarcely read without profit. An "awful warning" is betimes beneficial.]

Whether the frugal Swisses have any other commodities but their butter and cheese and a few cattle for exportation? Whether, nevertheless, the single canton of Berne hath not in her public treasury two millions sterling? [By dint of native industry the Swiss have added to their wealth by their industrial pursuits, which have since Berkeley's time increased in number and variety. The Swiss have now manufactures in linen, lace, thread, woollens, cottons, clocks, and watches, the two latter for a considerable time being a staple trade. Besides these are manufacture of leather gloves, silk, porcelain, toys, tobacco, and snuff in various places in Switzerland. The handy and industrious Swiss could supply the world with clocks, watches, and toys, and in hundreds of homes members of the whole family are engaged in toy-manu-

facture. Could not Ireland in her many country towns and village homes imitate the Swiss?

Whether that small town of Berne, with its scanty, barren territory in a mountainous corner, without seaports, without manufactures, without mines, be not rich by mere dint of frugality? [Berne has mines, or rather she is possessed of what constitutes them. Her minerals are iron, copper, lead, gypsum, freestone, lime, and granite. She has also good forests, and in her valleys the vine is cultivated, and cheese is one of her articles of commerce.]

Whether the Swisses in general have not sumptuary laws prohibiting the use of gold, jewels, silver, silk, and lace in their apparel, and indulging the women only to wear silk on festivals, weddings, and public solemnities? [Old customs are dying away fastly in Switzerland as well as in other places. Education moves apace in the cantons, and elementary and technical schools in Switzerland are on the increase, and their fame is wakening up the drowsy sluggards in Western Europe.]

Whether there be not two ways of growing rich—sparing and getting; but whether the lazy spendthrift must not be doubly poor? [He must indeed.]

Whether money circulating be not the life of industry, and whether the want thereof doth not render a state gouty and inactive? [Money is certainly the life of industry, but industry can create capital, and the capital acquired by industry is the most honourable and wholesome of all others. Wealth acquired by honest industry can always be enjoyed with a contented mind, and expended by the owner without a feeling of remorse.]

(To be continued.)

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

GABBY-STREET.

OUR early impressions of Gabby-street date long years back into the dreamy days of boyhood, and of its bibs, frocks, pinafores, and flagellations. Standing out in further and fuller relief are our days of stolen marches from home after the first decade, when a suit of corduroys with brass buttons, a Meeting-House-yard cap, and a pair of Francis-street pumps fresh from Biddy Cassidy's basket, made us bound with joy at the prospect of a glorious slide on the swamps of "Nobody's Land" in the North Lotts. Our first distinct visit to Gabby-street was under the protection of an elder brother to witness the great equestrian troupe at Gatty's Circus, and some months later our second visit was paid to a great gloomy building, which appeared to our young mind when we entered to be as many storeys under the ground as the gallery whereon we sat was above it. This place of nightly amusement was known as Galvert's Theatre, and the gods were wont to make the timbers creak and the rafters ring with an encore for Star, who played "The White Horse of the Peppers." The king of Mud Island and his bodyguard used to come in state from his Mud Mansion on the banks of the Tolka, and Bryan Maguire, who fought as many provoked duels as Tiger Roche or Fighting Fitzgerald, was a constant patron of the Gabby-street theatricals.

We don't exactly know for certainty why the name of "Gabby" was applied to this street, except it was from the fact of a celebrated oyster-woman of the name of Moll Macarthy, who kept a little shop for the sale of shell-fish near the Circus, who seemed to know everyone, and never let anybody pass by without putting her "comether" upon them. She was known to many by the name of the "gabby woman," and indeed she had the gift of the gab to a surprising degree; Biddy Moriarty, of Ormond-market, couldn't hold a candle to her.

Gabby-street has grown in extent since

our young days, and is divided into upper, lower, and middle. The first is the oldest and in some particulars the most historical; the second is the more modern, and within the last forty years its denizens have done their best, and succeeded, in maintaining the name of the street intact by their patronage of spouters, preachers, and public teachers, who muster in extra strength here; and the last is nearly equal in importance to the first in antiquity and associations.

In running out last week to keep our promise with the "Oldest Inhabitant," we found him contemplating "a monument such as the pride of kings could not confer [erected by an architect who] has left to posterity a name to be cherished and revered while the arts shall have an existence in the land."

"That is a noble building yonder, sir, and I well remember the day on which the first stone was laid in 1824 by the great architect himself, the founder and first president of the institution. The inscription on the first stone tells by whom and for what uses it was founded. The king granted a charter for the embodiment of our native artists, and poor Banim, the novelist, made a spirited appeal to induce the Royal Commemoration Committee of 1821 to combine their efforts so that a testimonial worthy of Ireland might be the result of the royal visit. The appeal was in vain; the money was devoted to the building of a bridge, but the architect nobly came forward and, at his own expense, erected that beautiful building, more glorious far in its conception than even in its execution. Death snatched away the architect before his complete design was realised, but his devoted wife supplemented her husband's munificent gift. The king's charter, sir, was very good in its way, but it might have remained a dead letter until this day if our native architect had not nobly come forward, and given our native creation a local habitation and a name."

"Nos. 88 and 89, there to the right of the church, are historical houses, sir. During the present century they have often changed hands, and various have been the enterprises begun and ended within them. Somehow or other I think a fatality has hung around these houses. They were not, in fact, what is usually termed 'haunted,' although some spirited and spectral people had to do with them. For a number of years the honours were about equally divided between Nos. 88 and 89, and organs of private and public opinion issued from both. Long before the broad sheets made their appearance there were some narrow sheets in journalistic form issued by Tom Tegg and Frank Maziere, very creditable specimens of native printing and literature. They were not illustrated like the old penny journals published forty years ago on the Quays, but they imbibed some of their spirit from the fact that some of the writers of the last contributed to the former. With the failure of the potato crop the last of the publishers and their publications died out or disappeared across the channel. A new race of speculators some years afterwards occupied these premises, the most noted among whom was one Jack Harness, a Munster attorney, who had a brain-box as deep as a pump-hole, and who could achieve any undertaking with unlimited credit. Jack, in an evil hour for himself, entered into the paper and public opinion business, and in the long run got smashed. His trade, however, as long as it lasted, was a glorious one, but the public only saw the outside of it. Jack, sir, took very few people into his confidence; the only exception to this rule was when he started 'The Blister,' designed to raise public opinion and secure a circulating medium the like of which was never before known in this city. 'The Blister,' according to the stamp returns then in vogue, had the largest circulation in the world. Jack was in the habit of getting some tons in weight of paper stamped long before he needed it, and what drowsy Dublin publisher could compete with such an enterprising genius who could quote such returns, which were enough to stagger common comprehension. Jack's editor got by his connection a worse name than he deserved,

for, to tell the truth, sir, he was a clever, good-hearted soul, who was merely duped for a while by one more clever than himself. Jack's zeal for religion was equal to his ambition to become a second Rothschild. The paper having served its purpose, was relinquished to other hands, and the representative of the people took to raising the wind by other means, but, like the engineer who was elevated by his own petard, Jack was lifted beyond the ultramontane hills, and collapsed on a swamp. *De mortuis nil nisi bonum.*

"Another singular character lived just opposite, of the name of Denham Hisslop. He also had a taste for literature—he began a gazette and ended in the *Gazette*. Denham was challenged one day to fight a duel by a half-sir, who felt aggrieved that his encumbered estate was not properly described. The journalist blandly declined running the risk of being food for worms. 'I'll gazette you as a coward,' indignantly exclaimed the half-sir. 'Go ahead, my boy,' coolly replied Denham; 'I'd rather fill fifty gazettes than one coffin.'

"Were you ever in the Craftsman's College," quoth the "Oldest Inhabitant"; "it is quite a modern institution, and it occupies the site of a noted theatre I used to frequent in my early days. Some odd characters, some years since, were among the directors, among whom were clerks, artists, shopkeepers, architects, mechanics, attorneys, and gentlemen of no occupation, but who nevertheless continued to occupy their time and other people's time in debating and building castles in the air. There were two parties of disputants within the walls of the Workman's University, the senior wranglers and the junior wranglers; but among the juniors, singularly enough, there were as many white-headed, or rather grey-headed, boys as among the seniors. The junior wranglers not being able to turn the seniors out of office by fair fighting, resolved on ulterior measures. They enlisted outside professional opinion to certify that the building was badly built as well as badly managed, and that consequently the funds were wasted. One architect, a member, described the structure as a tasteless heap of brick unrelieved by a single ornament, and as gloomy in external appearance as it was hollow within. To bear out his remarks, he called on a quondam friend of his, a practical bricklayer and a poet. The poet was an intelligent man, with a wonderful command of speech. 'Fellow citizens,' said he, 'I am called upon to express an opinion on the construction and stability of this building, and I shall give it without hesitation. Last week I lost half a day's work for the purpose of testing the truth of the public statement made respecting this edifice. I brought with me into town a plumb line and bob, a tape measure 100 ft. long, and a two-foot rule. I got out on the roof through the dormer; I dropped the line from the parapet to the area, and I found that the line below at the basement stood out 9½ in. from the wall. This, gentlemen, is I think proof positive that the building overhangs and is out of plumb. My decided opinion is, fellow members and citizens, that the first storey must come off.' What do you think, sir, after this oration, the next morning there appeared an article in the 'Bondman's Journal' congratulating the bricklayer on his technical knowledge, and warning the directors of the Craftsman's College to be advised in time. For six months after this there was a free fight every night in the board-room of the college, and only providence worked a miracle the senior and junior wranglers would have ended their contest like the famed Kilkenny cats."

"There is a dead wall yonder, sir, and thereon hangs another tale, but you must excuse me from entering into the narrative to-day."

Returning to the "Ship" with the "Oldest Inhabitant," we had a small luncheon, and we parted with the resolve of repeating our visits to the haunts and homes of the olden celebrities of Gabby-street.

THE SANITARY CONDITION OF THE CITY OF LONDON.

From the Twenty-fourth Annual Report of the Medical Officer of Health, Dr. Letheby, issued a few days since, we give a couple of important extracts respecting the water supply of the city, and the sanitary work of the past year. It will be instructive to compare matters with that of the sanitary work performed by the officers of the Dublin Corporation. The City of London is but a small area when compared with that comprised in the metropolitan area. As far as the water supply of the city and the metropolis is concerned, there are several sources of supply from various water companies. There is no Vartty scheme in London, and the water is of different degrees of goodness, or, perhaps, shall we say, badness. Successful efforts are, however, yearly made to improve the quality, and a marked improvement has lately taken place:—

THE WATER SUPPLY.

This, as usual, has been the subject of regular inquiry, the investigation having been extended to the quality of the water supplied by each of the metropolitan water companies. The proportions of saline matter dissolved in the water supplied by the Thames companies has ranged from 18.88 grains per imperial gallon in the case of the West Middlesex Company's water, to 19.66 in that of the Lambeth Company. The average amount of saline matter in the New River Company's water has been 18.97 grains per gallon; while in that of the East London Company it has been 20.04 grains, and in that of the Kent Company 27.21 grains. The hardness of the water has ranged from 14.6 degrees to 20.2; and the quantity of oxygen required to oxidise organic and other oxidisable matter has been less than the hundredth part of a grain per gallon of the water derived from the chalk wells of the Kent Company, and about a tenth of a grain in that derived from the Thames. The saline and organic ammonia obtainable from a gallon of water by Wanklyn's process has never exceeded the hundredth part of a grain. Four of the companies, namely, the West Middlesex, the Kent, the New River, and the East London, have constantly supplied water free from turbidity, even when examined in large volume, as in a glass tube two feet in length; but the water of the Grand Junction, the Chelsea, the Lambeth, and the Southwark and Vauxhall Companies has been frequently turbid. This has arisen from unusual floods in the river and from a want of storage capacity in the reservoirs of the company. Provision, however, is being made to remedy this defect, so that objectionable flood waters may be diverted from the supply. Taking the population of London at 3,311,298, it will be seen that the average daily supply per head ranged from 30.5 gallons in January, to 36.2 gallons in July; and that the quantity supplied to each house was rather more than 218 gallons a day. About six million of gallons of each day's supply were derived from the Thames, about four million gallons from the New River and the River Lee, and the remainder from the chalk wells of the Kent Company. In accordance with the provisions of the Metropolis Water Acts of 1852 and 1871, the Board of Trade, after inquiry into the matter, have sanctioned the regulations made by the companies for the purpose of preventing waste, misuse, undue consumption, and contamination of water supplied by them; and amongst other things the regulations prescribe the size, nature, and strength of the pipes, cocks, cisterns, and other apparatus to be used in every house, and they interdict all arrangements that may lead to waste or misuse, or contamination of water. These regulations came into force on the 10th of August last, and the penalty for refusing or neglecting to comply with them, or for wilfully violating them, is a sum of money not exceeding £5. It is provided, however, that all existing fittings, which shall be sound and efficient, and which are not required to be removed or altered under these regulations, shall be deemed to be prescribed fittings under the Metropolis Water Act, 1871; but gradually more severe regulations will come into operation with the view of providing for a constant supply; for under the act of 1871 it becomes the duty of the Metropolitan Board of Works and of the Corporation of the City, after giving due notice to the water companies, to bring the whole of their districts—part by part—under constant service. It is also in the power of any company, after due notice to the metropolitan authority, and after the expiration of at least four months from the date of such notice, to bring about the same results. At the eastern end of London this has already been done by the East London

Waterworks Company, who have given notice to the Metropolitan Board of Works of their intention to bring under constant supply on and after the 25th of March next the whole of the premises in the block of buildings between Hackney-road, Cambridge-leath-road, Church-street (Bethnal-green), and Shoreditch High-street. This block contains 6,273 houses, or thereabouts, and it appears to be the intention of the company to deal in the same manner with other parts of their district, including the city. The public must be prepared, therefore, for considerable alterations in the state of their fittings, so as to adapt them for constant service; and if such alterations are not made within two months after notice from the company the company may enter the premises and do the necessary work at the expense of the consumer or owner, or the supply may be cut off and the premises proceeded against as a nuisance, and the person in default liable to a penalty of £5. In view, therefore, of such obligations, it behoves the public to make provision, with as little delay as possible, for the adaptation of their fittings to a constant service, seeing that they have been clamouring for this for many years past, and that their wishes may, at any moment, be realised.

SANITARY WORK OF THE YEAR.

19,784 inspections of houses have been made by the four sanitary inspectors during the year, of which number 1,408 required amendment—the number of orders issued for sanitary improvement having been 1,958. But besides these there were 197 inspections of bakehouses, and 2,991 notices were issued for the periodical cleansing of the lodging-houses of the city, in accordance with the 6th Regulation made in pursuance of the 35th section of the Sanitary Act, 1866. These inspections resulted in the issuing of 661 orders for cleansing and lime-whiting the rooms of houses, 977 for cleansing and repairing privies, 402 for amending sinks and drains, 89 for removing waste water, 69 for amending the water supply, 50 for paving yards and cellars, 26 for abolishing cesspools, 12 for erecting and repairing dust-bins, 8 for improving ventilation, 9 for abating smoke nuisance, 4 for removing animals improperly kept, and 116 for sundry other improvements of houses. The inspector of shipping has made 1,797 inspections of ships, and has found 20 requiring sanitary improvement, chiefly in the cleansing and better ventilating of the forecables. The keeper of the Mortuary in Golden-lane has received 59 dead bodies during the year, and has kept them in decent custody before burial; seven of these were cases of small-pox, and four of continued fever, the bodies having been removed from the dwellings of the poor, where they would otherwise have been retained in the midst of the living; 2,149 infected articles have been received at the disinfecting rooms, and have either been disinfected and returned to the owners or destroyed. They consisted of 223 sheets, 184 blankets, 182 beds, 120 mattresses, 110 bolsters, 231 pillows, 134 quilts, 493 articles of clothing, 59 carpets, and 413 sundries.

The markets and slaughter-houses have been daily inspected during the year, and the two inspectors have condemned and seized 195,522 lb., or about 88 tons of meat, as unfit for human food—189,399 lb. were seized in the New Meat Market, 5,084 lb. at Aldgate, and 1,039 lb. at Leaden-hall. It consisted of 74,463 lb of diseased meat, 102,050 lb. of putrid meat, and 19,009 lb. of meat from animals that had died from accident or disease. The returns embrace 913 sheep and lambs, 108 calves, 380 pigs, 736 quarters of beef, 2,760 joints of meat, besides 3,149 plucks, 12 baskets of kidneys and melts, 1,572 kidneys, 51 hams, 190 sides and pieces of bacon, 4 barrels of pork, 17 pigs' chaps, 35 tongues, 35 ox-tails, 2 gamms, 12 fawns, 100 quarters and pieces of venison, 142 hares, 5 boxes and cases of rabbits, 644 rabbits, 2,146 head of game and poultry, 1 box of plovers' eggs, 2 hampers of eggs, 200 eggs, 29 cheeses, 1 cask of turtle, 1 barrel and 1 ped of fish, 1 barrel of plaice, 1 barrel of cod-roses, 27 mats of dates, 6 boxes of grapes, 2 boxes of pears, 2,500 oranges, and 106 cocoa-nuts. At Billingsgate and Columbia Markets the fishmetres of the Fishmongers' Company seized and condemned about 287 tons of fish during the year. It consisted of about 232,945 herrings, 171,826 plaice, 167,749 haddocks, 142,270 whiting, 129,050 smelts, 68,660 dabs, 2,900 gurnets, 8,586 thorn-backs, 3,457 codfish, 9,105 soles, 19,300 of various descriptions of fish, 7,907 lobsters and crabs, 205 bushels of sprats, 21 bushels of oysters, 235 bushels of periwinkles, 338 bushels of whelks, 216 bushels of mussels, 60 bushels of cockles, 9,603 gallons of shrimps, and 8,879 lb. of salmon and eels. Three persons have been convicted during the year of selling unwholesome food, and they have been punished by fine and imprisonment. All the slaughter-houses in the city (38 in number) have been daily

inspected, and the cow-houses (12 in number, with 102 cows) have been periodically visited.

Although the sanitary inspection in the City of London is far from complete, the above returns will show the amount of vigilance that is exercised in the detection and seizure of unwholesome food. In the matter of adulterated drinks, malt and spirituous, and of milk, there is great room and great need for inspection in London. The milk question is not looked after, except to a very small extent, consequently great frauds are committed, and the poor suffer.

The present year will be likely to afford better results, and the working of the new Public Health Bill will lead to more vigilance and reform on the part of the sanitary authorities of the city, and provincial corporations and local boards.

PROMOTING PUBLIC COMPANIES.

We hope the lesson taught by the annexed report will not be lost on some wise and prudent men in our Town Council, three or four of whom spend the greater portion of the public time in promoting bills and bubble companies. In justice to the Lord Mayor of London, we have to say he has contradicted the statement that he was ever a member or director of the so-called "Investment Company." Baron Martin gave a warning, and we also repeat his warning in this city, that certain folk had better keep their tongues quiet, for their secret transactions are not enveloped in such secrecy as they would fain make the public believe.

We will cut the running string one of these days, and exhibit the rats' terror at large:—

This action (Brett v. Clark and another, relating to the above subject), tried in the Court of Exchequer, Guildhall, was upon an agreement, by which the defendants undertook, in consideration of the plaintiff introducing gentlemen who would become directors and trustees of a company called the Government Stock Investment Company (Limited), which they were engaged in promoting, to pay him one hundred guineas for every director, and fifty guineas for every trustee, so introduced by him out of the first moneys they should receive on account of the said company. The breach alleged in the declaration was that, although the plaintiff had introduced two gentlemen to the defendant, one of whom became a director, and the other a trustee, and although the defendants had received ample moneys on account of the company to have enabled them to pay the plaintiff one hundred and fifty guineas, they had failed to pay him that sum. The plaintiff was the well-known shipping agent in Leadenhall-street, and the defendants, Messrs. Joseph Smith and Co., were financial agents. His lordship having ruled that there was no evidence against Mr. Clench in the matter, it is unnecessary to refer to his connexion with the case, he having had no opportunity of laying his version of the affair before the jury. The plaintiff's case, the nature of which appears from the above statement, was supported by the evidence of Mr. Ray, one of the officials of the Government Stock Investment Company (Limited), who swore that the defendants had received moneys on account of the company to the amount of £4,800. The company was a flourishing one, and the names of the Lord Mayor, Mr. Mandella, and other well-known and eminent persons, appeared in the list of its directors and trustees. For the defence, Mr. Hayes, one of the members of the firm of Messrs. Joseph Smith and Co., the defendants, was called, who swore that his firm had received the amount stated by Mr. Ray on the condition that they should appropriate it to the payment of certain specific debts and liabilities of the company. Among those liabilities were various sums of £80 each, which he swore were paid to certain of the directors and trustees of the Government Stock Investment Company (Limited), with which they were to purchase the requisite number of shares to qualify themselves for their respective positions. Baron Martin, in summing up, said that the real question the jury would have to decide was whether the defendants had received the £4,800 on the account of the company conditionally, and fettered with an obligation to appropriate it to certain specific purposes, or whether they had received it unconditionally, and consequently were bound to have paid the plaintiff out of it the sum to which he was entitled under the agreement. The case in no way depended upon

the legality or illegality of the conduct of the directors of this company; but in his opinion, if directors became parties to an arrangement by which shares were to be paid for out of the moneys of the company for the purpose of qualifying them to hold office in its direction, and induced the public to believe that they had invested their capital in the concern, whereas, in truth, they ran no risk whatever in respect to it, such conduct was contrary to law and to morality. Unfortunately, the law could not frequently get hold of the parties to such transactions, because such arrangements were invariably kept secret; but if the law could get hold of them it would deal with them in a very short manner. The jury, after some consultation, found a verdict for the plaintiff, being of opinion that the £4,800 had been received by the defendants unconditionally. Verdict for the plaintiff for £157 10s.

OUR WATER SUPPLY AND WASTE.

RETURN of the quantity of water sent into the outlying townships and into the city during the week ending the 25th December, 1872:—

Average quantity sent daily over Callowhill Weir, 15,821,674 gallons.

Average quantity of water sent into the townships daily, 1,530,855 gallons.

Average quantity of water sent into the city daily (accounted for), 6,699,802 gallons.

Average quantity of water wasted daily, 7,591,017 gallons.

(Signed) SPENCER HARTY, Asst. Engineer.
PARKE NEVILLE, Engineer-in-Chief.

Our readers may accept these figures if they like, but they are not bound in conscience to accept them. We would like to be informed what the Corporation officers consider waste. How is the average supply sent into the city gauged? Is our supply an actual one as to quantity, or a supposed one? Systems of averages are very handy both for actuaries and water bailiffs, and figures may be made to show anything. England has had a "Water Poet." Who knows that Dublin may not supply, between its engineers and chairmen in the Corporation, a Water-Waste Poet, or a Water-Tight Philosopher? A fair beginning has been made already, but people must have lived before their time, or their testimonials would have been long since erected.

ART INDUSTRY.

OUR contemporary (*Saunders*) furnishes the following account of the exhibition at the Queen's University, Molesworth-street. We hope, for the sake of all parties, students, and the public, that the praise has been well bestowed, and all the objects really merit the attention bestowed upon them. We may have an opportunity of having a say upon the subject ourselves:—

"The second annual exhibition of works of art and art industry, executed by the ladies who are students in the Queen's Institute, is now open at the institute, Molesworth-street. Amongst the best productions in water-colour painting are the drawings of flowers and foliage by Miss Hardinge, the groups of roses and passion flowers by Miss Todd, and the blackberry field by Miss Sealy. A branch of foliage by Miss O'Connor has been painted with great care. The copy of Guido's "Aurora," painted on ivory, with ornamented border on vellum, is well worth looking at. This department is under the charge of Mr. Cooper, who has now also the exclusive management, both artistically and in a mercantile point of view, of the porcelain painting. The products in the last-mentioned department are the principal feature of the exhibition, and afford a striking and most satisfactory proof of the value of the teaching of the institute. The sight of all the beautifully-painted and ornamented services which have been produced in Molesworth-street inspires one with a belief that all that has been said about our aptitude for the application of art to manufactures is not altogether dreamy sentimentality, but rests on a good substratum of truth. It should be explained that the articles which are painted and decorated are in the first instance imported in the form of pure white china from England. The ornamentation, the flowers, the foliage, the design, and the colours with which they appear embellished on the tables of the institute are all the work of the students. Many orders have already been received for these products from the trade by Mr. Cooper. There could scarcely be anything

choicer or prettier than these specimens of tea and dessert services and toilet ware. It will not have been forgotten that the painted porcelains of the Queen's Institute were awarded a medal at the late Dublin Exhibition. There are a number of tiles painted according to different designs by Miss White. The products now referred to have all been executed specially for this exhibition within the last three weeks or a month. The visitor passing through will notice some fans, handsomely painted on silk. A fan of this description has been ordered by the Countess Spencer. The illuminating department, taught by Mr. James M'Connell, is represented by some very brilliantly-executed borders. The laces produced by Mrs. Campbell's pupils are very richly wrought. A medal for laces was taken by the student's at the exhibition. Mrs. Campbell's picture frames, elaborately designed and cut out in leather, is a study. Some capital specimens of wood engraving, by Miss Higginbotham and Miss Corder, in Mrs. Oldham's class, are well worthy of the attention of publishers. A curious specimen of artistic genius is to be seen in the shape of a dish of butter sculptured into the form of a mass of fruit, flowers, leaves, &c., by the daughter of a farmer. The dish now on view is, we understand, nothing at all in comparison with one that she sent to the institute a few days ago. The artist is quite a young girl, and she performs this singular kind of sculpturing with a single instrument of bone, and the pursuit is one in which she is incessantly engaged. There can be no doubt whatever that the treatment of butter in this artistic fashion is her forte rather than making or selling it; and we have no doubt her name will be favourably known in the artistic world one day. A second room contains works executed by students for the South Kensington Department, under the direction of Mr. Mayne. These include chalk drawings from the flat and round, studies in oil, &c. The most meritorious are those of Miss Hardinge, Miss Higginbotham, and Miss Mitchell. In a third room are a number of pictures contributed by the Irish Society of Female Artists, which include one or two good specimens of fruit and flowers, and an excellent picture of a dog."

TRIA JUNCTA IN UNO.

(After Dryden.)

Three Jobbers in three well-known quarters born,
The Courts, the Town Hall, and Commons doth adorn.
The first in arrogance is unsurpassed;
The next, in subtlety; in both, the last.
The craft of Satan could no further dare:
To make the third, he joined the former pair.

Cork-hill

Pat.

NOTES OF WORKS.

A parochial house, from the designs of the late Mr. John Bourke, architect, and extensive out-offices, from the designs of Mr. John P. Davis, architect, have just been most creditably completed by the Messrs. Kelly, builders, for the Very Rev. Edward McGaver, P.P., V.F., Granard, County Longford.

A new chancel with sacristy and other improvements to Ballinacree Chapel, for the Rev. William Fagan, P.P., Mount Nugent, County Cavan, are in course of progress, under the superintendence of Mr. John P. Davis, architect.

Extensive alterations and improvements to the house and premises of James O'Ferrall, Esq., Kells, County Meath, are in course of progress, under the superintendence of Mr. John P. Davis, architect.

DUBLIN SANITARY ASSOCIATION.

At a late meeting of this association the following resolution was unanimously adopted:—

"That no communication having been received from the Public Health Committee since November 27th, in reply to reports of nuisances furnished to them, a special meeting of the committee, with the vice-presidents, be summoned to consider what course of action shall be adopted in view of the very inadequate results which have hitherto followed the representations of the association."

The usual weekly report of nuisances was brought up by the inspection committee, and a copy ordered to be forwarded to the Public Health Committee.

The moving and projecting spirits in the corporation are too busy at present to deign

to consider the question of the Public Health. They will no doubt, accept the proffered service of the Sanitary Association, and thank them with the same etiquette that distinguishes pigs.

HOME AND FOREIGN NOTES.

PROGRESS OF BELFAST.—In the year 1871 there were erected in Belfast 1,261 new houses, with an increase to the valuation of the borough of £14,980. In the past year there were 1,047 houses erected, the increase in valuation of borough being £10,165. The total ratable valuation on 1st January, 1872, was £440,846; on the 1st of January, 1873, it is £451,011.

VALUE OF GROUND IN NEW YORK.—The fact is cited as illustrating the advance in New York real estate, that the three lots, each 25 by 100, on which A. T. Stewart's marble house is situated, corner of Fifth-avenue and Thirty-fourth-street, were sold at auction twenty years ago for 4,800 dols. They are now worth 300,000 dols.

RATING OF CROWN PROPERTY.—At the weekly meeting of guardians of the South Dublin Union, the following resolution was passed unanimously:—"That this board do prepare and forward a memorial to the Lord Lieutenant, with the view of having public buildings, Crown offices and lands, and such-like property, subjected to rating for Poor Law and fiscal purposes."

INDUSTRIAL NEWS.—It is announced that a new half-crown monthly magazine is about to appear under the title of the "Practical Magazine." It will be "an illustrated encyclopædia of industrial news, inventions and improvements, collected from foreign and British sources, for the use of those concerned in raw materials, machinery, manufactures, building and decoration." It is to be published for the proprietary at Printing House-square, next door to the Times office.

TO CORRESPONDENTS.

THE NEW YEAR.—We hope to introduce several new features into our pages during the present year, and make the journal both generally as well as professionally useful and readable.

DRAMATIC ART.—The drama, both in England as well as Ireland, is at a very low ebb indeed, as far as good plays and respectable and representative actors are concerned. Positive rubbish is the only fitting word we can apply to nine-tenths of the idiotic trash placed upon the boards of our public theatres, and Dublin theatres unfortunately follow in the wake of wretched London examples. A large body of our actors and actresses are mere mummies and mountebanks, and those who write for them pander to a vitiated taste by travestying some of our best productions. It is disheartening and sickening to witness the wretched exhibitions of dramatic art which some of our daily papers in this city land to the skies. We notice in London lately some sign of a healthy reaction in favour of some of the best comedies in the language, notably those of Sheridan and Goldsmith. In the absence of a faithful personation of Shakespeare it is a glorious relief even to have such comedies to fall back upon.

MARBLE-WORKING MACHINERY.—Correspondents, by paying a visit to Messrs. Stothorpe's works in this city, will be able to see more and learn more than we can inform them by half a column of description.

RICHARD KIRWAN.—This able chemical philosopher and Irish mineralogist died, we believe, about the year 1812. Vallancy, the Irish antiquarian, died also, we think, in the same year.

A MEDICAL OFFICER OF HEALTH.—When you challenge public statements made upon the credit of a professional publication, you ought not to be ashamed to sign your name to your communication. The sanitary question is too serious a matter to be made a house of contention for rival professionals of totally distinct callings. We cannot certainly dissect a human body, but we can a public abuse, and we are determined to prevent a great reform being made a milch cow of in the interest of any profession.

CENTRAL RAILWAY STATION.—Another effort is to be made in wasting public moneys over this scheme, which was defeated last year. Corporate jobbers are still discontented, and their friends the solicitors require a little more plunder from the public purse. Former opponents are reported to be converted to the scheme by the free and easy process adapted on all like occasions. Our eyes have not been closed during the winter.

THE SEWAGE AND RECLAMATION OF LAND BILL.—We intended to have had a say about this project, which was neatly pinned on to the Main Drainage Act, to effect a double purpose. It is worthy of its real projectors and particularly of the close-reeling and circular-sailing essays of the Simon Pure of the Dublin Town Council. Simple Simon!

THE CITY AUDIT.—With one or two exceptions, the Press of this city has not spoken of this important matter in the interest of the citizens. A Government audit of public board accounts, and particularly of this Borough Account of Dublin, ought to be hailed with satisfaction by every honest person.

INQUIRER.—Our correspondent and other inquirers will find the subjects they mention alluded to in one or more articles in our present issue.

CURRENT LITERATURE.—The magazines received, along with others which had not reached us as we went to Press, will be noticed in our next issue.

TO SUBSCRIBERS AND READERS IN GENERAL.—"A Happy New Year."

"A VISIT TO EPS'S COCOA MANUFACTORY.—Through the kindness of Messrs. Eppe, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Eppe, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*."—See article in *Land and Water*, October 14.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPE & CO., Homoeopathic Chemists, London." Also, makers of Eppe's Cascade, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAONE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Eppe and Co., manufacturers of dietetic articles, at their works in the Kuston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbot-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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TESTIMONIALS.

From **WILLIAM TITE, Esq., M.P. for Bath, and Architect of the Royal Exchange, London.**
House of Commons, 2nd March, 1864.

DEAR SIR,—In reply to your note, I beg to say that I have used both the sorts of Cement manufactured by your firm, and that of Messrs. Francis and Son; I mean the Cement usually called Roman Cement, or the more recent introduction of Portland Cement. I believe these Cements, manufactured by either of your firms, to be equally good. I know no difference, chemically or practically, between them; and I should use, and authorize to be used indifferently, either one or the other. You are at liberty to use this note, if you think it necessary.—I am, Dear Sir, your obedient servant,
Messrs. White & Son. (Signed) **WILLIAM TITE.**

From **R.O. MINNIE, Esq., Surveyor to Board of Ordnance, London.**
War Office, Pall Mall, London, S.W.,
3rd March, 1864.

GENTLEMEN,—In reply to your request, I have much pleasure in stating my favourable opinion of the quality of your Portland and other Cements, which have been extensively used in the Public Works connected with the War Department at home and abroad, especially in several of the fortifications now being erected in this country. On all occasions within my knowledge the quality has been equal to that of any other manufacturer, and has given great satisfaction.—I am, gentlemen, your obedient servant.
(Signed) **R. O. MINNIE, Surveyor.**

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Art Worker in Iron,
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Cut Floor Brads, 2 in. 16s. 3d., 2½ in. 16s., 2½ in. upwards, 15s. 9d. per cwt.	Screws, 25 per cent. off Nettiefold's List.							
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	1s. 5d.	1s. 10½d.	2s. 4½d.	2s. 10d.	3s. 4d.	3s. 9d.	4s. 3d.	4s. 8d. 5s. 3d. 5s. 8d.
Japanned Scotch T Hinges,	8	10	12	14	16	18	20	
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The Irish Builder.

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*Irish Building and Ornamental Stones.**

SECOND NOTICE.

GRANITES OF IRELAND.



HE more we examine Professor Hull's excellent work, the more we are convinced of its national and practical value, even when only viewing it from an Irish point of view. During the last quarter of a century numerous

volumes, rudimentary and otherwise, have been issued in the sister kingdom by English and foreign writers, treating of masonry, and architecture, and engineering as a whole. Though many of these volumes have afforded considerable information on building materials, the amount was limited, and possessed but a relative value. We needed such a work as the present, and until such time as science and architectural practice evolve, as they certainly will, a more exhaustive work on the part of an engineer and architect, who will have at the same time to be a practical geologist, we may with gratification accept the present contribution as a good foundation towards the history, uses, properties, and distribution of our building and ornamental stones. In saying this much as far as this country is related, we must not eliminate from view the recent labours of our countrymen as well as some English gentlemen engaged for many years on the Irish Geological Survey; nor can we omit to keep in mind the admirable contributions of Mr. G. Wilkinson, M.R.I.A., and those of Sir Robert Kane.

Granite, according to our present authority, is distributed in four districts in Ireland—north-west in Donegal, west in Galway and Mayo, on the south-east in Wicklow and Wexford, and on the north-east in Down and Armagh. It exceeds, of course, in some instances these limits, but the above are the districts where its chief development may be found. According to a report drawn up by Mr. R. H. Scott, Sir Richard Griffith, and the Rev. Dr. Haughton—names well known in this country,—the granites of Donegal in the main are of a reddish colour. There is a white specimen found at Kindrum, in Finad, and in Arranmore Island; and in the latter island there is also a crystalline red granite susceptible of a fine polish. Some very good descriptions of our Donegal granite were exhibited by Mr. Harte in the late Dublin Exhibition, suitable for various building and ornamental purposes.

Respecting the granites of Galway, which have been prominently noticed in connection with the marble of that district, there are two principal varieties—the first, a porphyritic variety, and is very beautiful; the second, or Oughterard granite, is a good granite also, but it contains iron pyrites. All the Galway granites can be used for building purposes, but the first-named is

admirably adapted for ornamental purposes. We were lately informed by an English marble merchant of several years' experience who specially paid Galway a visit in the autumn to look up its marble beds, that the granite and marble of this western district exceed in beauty and value any that has come under his notice in the sister kingdoms. He regretted much that some effort was not made to utilise the granite and marble beds to a greater extent than is being, or is likely to be, done by our native merchants. He was of the opinion that a company could be formed to work the district. As an individual, he would not hesitate himself to embark in the enterprise, in the event of favourable conditions being obtained for the opening of quarries in the district. There is near Louisburgh a large bed of granite of good quality, judging from its constituents, but no attempt has yet been made to turn it to any useful local or general purpose.

The Dublin, Wicklow, and Wexford bed runs through a mountainous chain of country extending, according to Professor Hull, in a S.S.W. direction from Blackrock, in our suburbs, to Pollmounty, near New Ross. This mass rises at the famed Lugnaquilla to a height of 8,039 ft., and it is at this elevation capped by schist. Taking the Foxrock variety, which was described by Professor Haughton in the Quarterly Journal of the Geological Society, 1862, its chemical analysis shows its properties as follows:—Silica, 78.00; alumina, 13.64; oxides of iron, 2.44; lime, 1.84; magnesia, 0.11; potash, 4.21; soda, 8.58; loss, 1.20 (total, 99.97). The Foxrock granite is a large-grained granite, containing much quartz. From many analyses of granite made, Professor Hull quotes thirteen examples, but these are chiefly in relation to foreign specimens. He observes, in relation to these examples, that "the predominating constituent is silica, and the next in importance is alumina; the relative proportions of potash and soda are also features of importance, because in the soda granites the orthoclase is replaced or accompanied by albite, as in the case of the granite of the Mourne Mountains in Down."

It appears from the analysis of Dr. Haughton that the granite of Goraghowood, near Newry, contains only 62.08 per cent. of silica. The specimen of granite from the Mourne Mountains, quoted by Dr. Haughton, contains quartz, orthoclase, albite, and green mica, and its chemical analysis is as follows:—Silica, 75.00; alumina, 13.24; oxides of iron, 2.52; lime, 0.69; potash, 4.88; soda, 8.07; water, 0.80 (total, 99.65). The presence of water in granite will, no doubt, sound new even to many persons connected with the building profession, yet in more senses than one it is an important element in the consideration of the choice of building stone. In a humid climate like Ireland and the British Islands in general, there is a greater absorption of water into our building stones than is generally imagined; in fact, there are many folk who believe that stone absorbs no water at all, although they are believers in the old proverb that "the constant drop wears the stone." Our best and hardest granites contain water in greater or lesser proportions to their texture. An analysis of the chemical properties or constituents of all of our building stones, we believe to be all important, particularly in these days when fireproof construction is beginning to receive attention at the hands of architects, engineers, and

respectable builders. According to the nature and class of the building stone, it ought to be known what amount of water, bitumen, iron, carbon, &c., enters into its composition. Thus we will be able to know to what extent it will be injured by heat or the ordinary atmospheric influences of the weather and time. Thus only can we build up data as to the behaviour of building stones under all conditions; it will also afford us proofs of the resisting power of stone to crushing weights.

In building construction, granite, as well as limestones and sandstones, ought to be hewn and placed upon the same bed as it lay in the quarry. Attention, however, is not paid to this, but it too often happens that the mason at the quarry or those who direct him will shape the stone as it best answers in a view to height. The power of Irish granites to resist crushing forces varies much, as do all other descriptions of building stones: it depends upon the character of the rock. Mr. Wilkinson, in his "Practical Geology and Ancient Architecture of Ireland," furnished some years since a series of interesting and valuable experiments. The testing apparatus or lever was prepared by Mr. Mallet, C.E., of this city, and cubes of one inch size were selected. It was found by some very successful experiments that the weight in pounds required to crush the specimens varied from 2,310 up to 13,400. Now these experiments show a very wide difference indeed. The strongest granite, therefore, appears to come from Newry, Co. Down, and the weakest from Ballyknocken.

The opinion which we have always held in respect to the Co. Dublin granites we still hold. From our first knowledge of them, and from some experience of their use, we looked upon them as a durable class of building stones, and with a great resisting power. A careful selection is needed. The granites of Killiney and Kingstown (Dublin), according to Mr. Wilkinson, quoted by Professor Hull, afforded good results in the testing experiments. We need a new series of experiments with our latest testing machines, for the resisting power of our granites, sandstones, and other native stones is far from satisfactorily solved.

The specific gravity of ordinary granite is put down at 2.66, and a cubic foot is said to weigh 166.2 lbs., and as nearly as can be ascertained a cubic yard weighs 2 tons, or about double the weight of a cubic yard of coal. It appears that in our Killiney granite schorl or tourmalin is present, and produces what is termed "schorlaceous" granite; this occurs in some English granites also, notably in that of Cornwall. We have in Ireland a description of granite which is plentiful in other countries, known as "graphic granite." This variety is to be found at Clifden, in Connemara, where some beautiful marble is also to be had in abundance.

On the authority of Professor Ansted, granite contains about 0.8 per cent. of water, and is capable of absorbing one-fourth more, or 0.2 per cent. We quite agree with Professor Hull in the importance of observing the quantity of water granite is capable of absorbing, as the influence of frost on stone is a matter of moment as well as fire. Professor Hull is of the opinion that, "as the influence of frost on stone is in proportion to the quantity of water it takes up, and the result determines to some extent its durability." The variable character of our native granite

* "A Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries." By Edward Hull, M.A., F.R.S. London: Macmillan and Co.

gives a wide field for choice, and among the several specimens in the granitic group indigenous to this country there are very remarkable varieties. Some of these we have already mentioned. We may note the existence of another variety called syenitic granite, which, when in addition to quartz, felspar, and mica, it contains hornblende. This variety occurs in part of the Sleeve Croob range in the Co. Down.

Speaking on the general examination of stones with the highest knowledge possessed in his time, at the commencement of the present century, Richard Kirwan writes:—"Their specific gravity should first be examined; also their hardness, whether they will strike fire with steel, or can be scratched by the nail or only by crystal or stones of still greater hardness; also their texture, perviousness to light, and whether they be manifestly homogeneous or compound species. 2nd. In some cases one should try whether they imbibe water, or whether water can extract anything from them by ebullition or digestion. 3rd. Whether they are soluble in or effervesce with acids before or after pulverization, or whether decomposable by boiling in oil of tartar, &c., as gypsum and ponderous spars are. 4th. Whether they detonate with nitre. 5th. Whether they yield the sparry acid by distillation with oil of vitriol, or a volatile alkali by distilling them with salt of tartar. 6th. Whether they are fusible *per se* with a blow-pipe, and how they are affected by mineral alkali, borax, and microcosmic salt; and whether they decrepitate when gradually heated. 7th. Stones that melt *per se* with the blow-pipe are certainly compound, and contain at least three species of earth, of which the calcareous is probably one, and if they give fire with steel, the silicious is probably another."

Notwithstanding the advance of mineralogy and chemistry, and the change in nomenclature since the time of Kirwan, it is well to bear in mind what our native mineralogist has written in the above analysis, for the purpose of comparing it with the views at present put forward. Microscopic examination is without doubt a ready and useful method in arriving at conclusions as to the character of a doubtful stone, but we believe the importance of a chemical analysis can never be overlooked. Although we would like to see all our architects, engineers, builders, and workmen possessing a love of geology, we would also wish them all to possess a knowledge of chemistry, even in a rudimentary way, as far as the materials used in building are concerned. Building workmen ought not only to know the principles of their trades, but they ought to know the chemical properties and the geological characteristics of the materials they use, whether they be marl, common sand, brick-clay, lime, painting earths, limestones, sandstones, or granites.

We must stop for to-day, with a promise of resuming the subject in our next, on the other indigenous building and ornamental stones of Ireland.

TECHNICAL SCHOOLS AND WORKSHOPS.

As already mentioned in a former issue, the Crystal Palace directors have determined upon opening a school for the instruction of students in engineering, and the preparation of candidates for admission into the Royal

Academy of Painters. The session, including the new arrangement, was opened on the 8th. We are informed that upwards of fifty students have presented themselves for the new classes, which will be under the superintendence of an able principal. Mr. J. W. Wilson is already known as a manufacturer and engineer, and has what is absolutely required—considerable practical experience. We believe Mr. Wilson was a pupil of Sir Charles Fox, and assisted at the erection of the Crystal Palace Exhibition of 1851. Heretofore the Crystal Palace contained many facilities for those intending to improve their education, by observation and even practice. It had a system of hydraulic machinery for the service of its fountains; and, engaged in this work there were about six forty-horse engines, with lifts of great height, tanks, reservoirs, and an artesian well. There has also been and is still a technological museum in the galleries of the Palace, with a good selection of ores, metals, tiles, woods, stones, fabrics, machinery, and a variety of other objects. The location of the new school will be in the south tower, which will embrace a foundry, smith's-shop, workshop, pattern and fitting-shops, drawing-offices, lecture-room, and refreshment-room. Provision is made for boarders, and the principal will be allowed to take a number. Arrangements are also made in the vicinity with the resident inhabitants, who will receive pupils from the Palace school upon terms which are registered in the Exhibition building.

In the absence of any similar school in Dublin, it would be worth while for parents in this country intending their sons for the engineering profession, to avail themselves of these great facilities. Need we ask why cannot such schools and classes be established in this city in connection with our Exhibition building? It matters not whether it be on the ground of the building or outside the city,—sufficient to know that it exists as an offspring. The Messrs. Guinness, who have already done good work, would still do better in leading to the establishment of technical schools and classes in Dublin; and we are certain if the movement was begun they would not be allowed to bear the whole responsibility of the preliminary work necessary. The directors of the Exhibition would, no doubt, financially assist in such a noble undertaking, and in two or three years the establishment would be self-supporting.

We do not see why a school of engineering and technical schools and colleges for our workmen could not be safely founded and worked in this city. The classes could be formed and conducted with a view of making scholarships obtainable by the students, and, as an encouragement to study, certain annual prizes might be offered. Many of our merchants and propertied gentry would no doubt contribute moderate sums of money or articles of value as prizes. We are also certain that there are some of our Dublin, Belfast, and Cork manufacturers whose success and trade depend on designs for fabrics, and machinery and mechanical appliances for accomplishing the same, would also cheerfully respond. Our schools of art already in existence are limited, and the practice within them is limited. We want more modelling and constructional practice. The art of drawing is in itself an admirable first step, but the material progress of a nation does not depend upon the fine arts, but on the mechanical and industrial arts.

If technical schools, classes, and workshops were established long since in this city, all our branches of trade would have improved, employment could have been found for four times the number of our workmen, and only under exceptional exigencies would there be any need of sending over to foreign countries for supplies either of workmen or designs. We would that we could impress upon the minds of Irish fathers and mothers the wisdom of providing for their children a sound practical education, fitting them for the battle of life. Many of them foolishly imagine that the Church, the Bar, and the Medical profession, afford good opens; and in the absence of those, the Army and the Navy, when the tastes of their sons incline in that direction. The three former professions are unfortunately always overstocked and only a few succeed at the Bar and at the Medical profession. Long years of hardship and hard-fagging have to be endured, and thousands are worsted in the struggle to obtain a respectable competence. In the matter of Clerkships, there is nothing so deplorable as to see the fate that awaits hundreds of respectable lads who have a difficulty in procuring situations when they arrive at the age of manhood, and when out of office are often on the verge of starvation before they can procure a re-engagement. Had those young men been brought up to some practical occupation or mechanical trade their chances would be many, either as well-employed artisans or successful employers. Seldom at present does an energetic mechanic remain long out of employment, if his mistaken notions are not allowed to interfere with his obvious duty as a man.

We want in every branch of trade better workmen, and, as a consequence, we will eventually have a better class of employers. To effect this, technical education is necessary, and the establishment of technical schools, classes, and workshops is one of the great wants of our time.

OUR "MUSICAL FESTIVALS" AND "MUSICAL" CRITICS.

Is there such a thing as independent dramatic or theatrical criticism, or ought else in this line, by the Press of Dublin? Alas, we fear there is not more than one isolated case; consequently bad, good, and middling singing and acting come in for systematic praise. Our so-called Musical Festivals here were not entirely destitute of good singers or good music, but mixed up there has been a medley or wretched farrago of all that was senseless, saddening, and servile. We have a national music, ancient and modern, sufficient to rouse the most lethargic natives, but why is not some noble or honest attempt made to give it an expression consonant with national desires and feelings? This will never be done until we have an independent Press proprietary in our midst, and critics who understand what they write about. Now we will not be invidious, and pick out either actors, singers, or editors for the purpose of putting them in the pillory, but we must subject to a general condemnation the entire system by which these festivals are got up and supported by the dishonest notices in our public journals.

Let the fact, then, be made known for the hundredth time that the musical and dramatic critiques in our daily papers are dishonest, shameful, utterly unworthy, and a scandal to

journalism and Ireland! Praise is lavishly dispensed because the system pays, and the evil may be traced to two or three principal causes—"free orders," long and repeated advertisements, and personal and private influences. Some of these fulsome notices that appear are in substance supplied by the actors, actresses, and singers themselves, or their personal friends; and all of them may with truth be said to be written to order. Let this fact be known also: there is not a second daily newspaper in this city—and we say it with a feeling of regret—that has a *bona fide* musical, dramatic, or fine-art critic on its staff. The majority of these so-called critics are ordinary *penny-a-liners*—a very active and industrious class of gentlemen, no doubt, but who have to be unscrupulous in their statements that they may live. If these very industrious gentlemen can create a sensation or make a hit in their "slap-dash" notices, so much the better for themselves and their employers. "A full house" on Saturday night will procure a longer advertisement on Monday morning, another "free pass" all round, and a hob-nob perhaps with Signor, Senora, Herr Bugle, Madame, or Mademoiselle. If the latter delightful introductions are accomplished, your enthralled *penny-a-liner* will revel and luxuriate in his delightful description of the singing or acting in his next notice. Ask his private opinion, however, over a friendly glass away from the precincts of the theatre, most likely he will honestly blurt out—"Damn rot;" "wretched trash;" "'pon my soul it is." Our *soi-disant* critic is quite right, but he will not unlikely add—"the public swallow it; it goes down, and I have earned two 'quids' by it, and hope to earn several more."

It may seem very cruel of us to write thus, but it is absolutely necessary, that an illusion may be dispelled and that the unmistakeable facts may be known. Debasement can be seen on all sides, and even religious performances are not free of cancer. The self-abasement, however, of those who should be our guides or public instructors is lamentable in the extreme, and we know of no method without infringing the law whereby we can counteract the evil except by public exposure.

We cannot avoid mentioning one instance bearing us out in what we have written above. Out of the critiques upon last Saturday evening's concert which appeared in the morning journals of Monday, but one writer was aware that Madlle. Macvitz did not sing the song announced for her in the programme, consequently the other four wise-acres *praised* the song she did not sing!! One only was able to inform the public the title of the song she sang, which was a cavatina by Mercadute, and which was most exquisitely rendered by her.

The projectors of "festivals," concerts, and the lessees and managers of theatres and music halls have got the notion into their heads of late years that the newspaper Press exists for their convenience alone. In fact some of these fraternities are heard to exclaim aloud that they can "buy over all the newspaper rags for a few orders for advertisements." Judging by recent and present events, there would seem to be some truth in the boast of those theatrical folk. We have seldom read more fulsome flattery and illiterate criticism in our lives than it has been our misfortune to peruse in some of our Dublin morning journals. We were glad to see that there was one partial protest against the

unscrupulous policy that has distinguished some late announcements and performances. If the thin edge of honest and educated musical and theatrical criticism can be successfully introduced, even through one daily journal, good will follow. By driving the wedge home, we will split the fabric of cant, and the whole structure will in time collapse like a house of cards. If bad actors and singers and unprincipled managers were made to fear criticism, we would soon have a better class of musicians, singers, and actors, and the idiotic screechers and tumblers would be relegated to the limbo of public disgust. In these days of musical scavengers and dramatic billposters, Dublin is blest with a race of critics equal to the crucial strain put upon them in the interest of dramatic fungi and journalistic dry-rot.

PORTOBELLO "SPA."

In the course of a letter to a daily contemporary, Dr O'Leary disputes the assertion of Professor Cameron as to the alleged impurities of the waters of the mineral spring at Portobello, which has been termed of late years the "Grattan Spa," but which with more truth might be termed the Rathmines Well. Speaking of the impurities, Professor Cameron said he was inclined to think that some of them will be found to exist on the city side of Portobello harbour. He also said that he was informed that there were cesspools in the locality, and that their contents escaped into the ground. To these and other statements of the Professor, Dr O'Leary replies:—

"Now, assuming this statement to be correct—that they 'escape into the ground'—allow me to give a fact as my reply. The floors of the houses on the city side of the harbour are inches *lower* than the delivery pipe of the spa on the opposite of the harbour, and also inches above the grass level of the ground. Then those cess-pools (if they exist at all) must be on a lower level. As a matter of fact a sewer does exist 2 ft. under the level of those city-side houses, and empties itself into the main-road city sewer, which lies 7 ft. under their level, and within a few yards of their site. Now, how any sewage impurities from the city-side houses alluded to could elect to elevate themselves so many feet for the purpose of contaminating the Grattan Spa—even to assist a theory—must be matter for speculation. But imagine the hugeness of its struggle when, in order to reach the spa, it could only succeed in its lowly ambitious way, by perforating the concrete foundations of the retaining wall of the harbour, many feet below the level of either houses or sewage, and all but for the mere contaminating the much-maligned spa at Portobello.

Dr. Cameron again says: "The Portobello Spa is a mere land drain from the canal embankment." This year's rain is the most repudiative argument I can use against such an assumption. From Midsummer Day to the present time no man can state that he has noticed almost the slightest change in its water delivery. I shall not waste words to say more in refutation.

Dr. Cameron further says: "It certainly would appear as if the spa was situated at a much greater height than that of the original level of the ground." This last assertion too plainly tells "how easy 'tis to disagree." Had Dr. Cameron, on the day he collected the five gallons of water from the iron pipe of the spa, and which cost him at least one hour of his valuable time, merely looked about him with a geological eye, as anxious to discover a source for what I stated to be a "sulphur spa," as to collect impurities, he would have found, I am sure, sufficient data to prevent him committing himself to such a statement. The facts are against him so much in this particular that I trust are long to have the pleasure of hearing him state, as a geological fact, that the Grattan Spa is of mineral origin, and has its source many feet higher than even the highest part of the canal embankment. He has spoken hastily, I have not. I am armed with abundance of geological facts, he is without them. Had he known this, both would have been spared the seeming position of appearing as puppets dangling our views before the public, actuated only by prejudice as the motive power, and not by scientific data, and a desire to give the working classes of

Dublin the result of anxious labour and scientific research."

Well, well; doctors will differ. Whether impurities of the kind indicated escape into the water in the manner reported by Professor Cameron, we are not prepared to say; but this we do know, that for many years during which our contact was with the locality, the surroundings of this spa, through surface, if not through under sewage, contamination, were in anything but a defensible state. Matters may have changed of late; but if the purity of the water is to be defended, the "Spa" will need a little more care on the part of the local authorities than it has received of late years. Nuisances have been of frequent occurrence during our recollection in connection with the Rathmines well.

L A W.

NORTHERN POLICE COURT.

ARCHITECTS, BUILDERS, AND WORKMEN.

Dr. Alex. Taylor, resident physician of the Rotunda Hospital, summoned William Smith, a builder, for a breach of the Master and Servant Act. Dr. Taylor stated that he was the owner of the townland of Prospect, Glasnevin, and recently built four small cottages. Specifications of the carpentry work to be done to the cottages, were drawn up by his architect, Mr. John L. Robinson, and the defendant entered into a written agreement to do the work in two of the cottages, with reasonable speed, for £25 per cottage, the owner supplying the materials. Subsequently, a verbal agreement was made to do the carpentry work of the remaining two cottages, at the same rate. The agreement was dated in May last, and according to the evidence of the architect, the work could be finished in four months. Dr. Taylor complained that the defendant had not proceeded with it, but neglected it, for considerable intervals of time, and at length, in December last, he employed another man—a working carpenter named Archbold, to complete the work for £13; and it was not yet quite finished. He now sought to have the agreement with Smith cancelled, and a penalty of £20 imposed. Mr. Byrne, instructed by Mr. Fitzgerald, appeared for Dr. Taylor. Mr. Nicholls, instructed by Mr. Scallan, for Mr. Smith. It appeared that Dr. Taylor had already paid the defendant £80 of the money, and also that the defendant, on entering into the agreement had sublet the contract for £56 to Archbold, with whom he subsequently had a falling out. The defendant's case was, that he could not get on more promptly with the work, as delays occurred in the masonry which obstructed him. This was corroborated by the evidence of Archbold; but Mr. Robinson, the architect, stated that, on the other hand, the mason had been constantly complaining of being obstructed by the delay in the carpentry work. Mr. Nicholls objected that the Master and Servant Act did not apply, although his client occasionally worked himself at the bench, and also that the summons was informal, as it stated there was a written agreement to do the carpentry work of four cottages, whereas the written agreement produced, referred only to two. His Worship held this point fatal, and said he would dismiss the summons without prejudice to the issuing of a fresh one. He suggested that as the complainant did not press for the penalty, and merely wanted to get the agreement cancelled, and as the defendant had already got £80 of the £100 which the architect deposed was an exorbitant rate of payment for the class of work required in such small houses, and had actually himself sublet the contract for £56, the defendant might consent to the cancellation of the agreement, and the termination of the matter in that way. The defendant, however, declined to do so, and the case was dismissed without prejudice.

Mr. Swanzy, solicitor, appeared to answer a summons, at the instance of the Corporation, to show cause why portion of his house should not be taken down, as being in a dangerous condition. He stated that the wall in question had been unsafe, but it had been since shored up at considerable expense by Mr. Grant, builder, Pembroke-street, and it was now perfectly sound. There was no appearance for the Corporation, and his Worship dismissed the case. Mr. Swanzy complained that he should be vainly put by the Corporation to the annoyance of coming to the court to answer a charge which the Corporation did not think fit to prosecute when it was made.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

UNIVALVE-STREET.

HAVING received a note from the "Oldest Inhabitant," informing us that he could not meet us, as arranged, to continue our visits to Gabby-street, in consequence of his having an urgent appointment in the suburbs, he suggested that we should meet on his return journey at the corner of Univalve-street. We were not displeased at the change, as we had some recollection of this single shell street ourselves, so immediately after breakfast we proceeded alone to refresh our memory with a glance at old features and surroundings, until we could be joined by our faithful cicerone.

Univalve-street is a singular street, in sooth, in a variety of ways, and can boast of a knowledge of singular characters in days gone by. This street, which is situated outside the great Roundabout-road, dates back to the days of our native Parliament, when its site was marked out and its intended buildings commenced. It has an inlet but no outlet, and is in consequence a "No Thoroughfare," and it stands upon an Island which may be walked around even at the highest of spring tides.

Univalve-street boasts in the actual possession of one respectable and well-built gentleman's brick mansion, and we believe there exist the foundations of a few more which never reached much further than the footings. This singular dwelling is about five storeys high, possesses two fronts, and preserves a tablet showing the date of its erection in the eighteenth century. Gossip tells many strange stories about its builder and first dwellers, and it is certain that if the walls of this old brick house could tell tales, volumes might be compiled. It was believed to be haunted at one time, and was unluckily for a long period; but in our own recollection it was haunted more by the eccentricities of the living therein than by the spirits of the dead. Early in the present century, when the house was to let, it was often visited by pirates, buccaneers, and smugglers, who frequented the "Island"; and though the owner failed to find a tenant, the shrewd old woman who had the care of the mansion, and who knew a few secrets, was in the habit of making a few shillings by her clandestine lodgers. There were two houses across the river in the vicinity where these heroes used to resort—one was called "Cockle Hall" and the other "Paddy Ready Penny's." Stewed cockles was a favourite dish in the former, over a quart of Thunder's three-halfpenny ale. Paddy's house, where everything could be had at the "Dublin prices," was much resorted to also; but Paddy preferred short reckonings and quick returns, and was of the opinion that credit was a short-lived customer whose life was not worth an insurance. There were many who held the same opinion. Paddy generally paid ready money for all his orders when they came to hand, and in consequence secured the cream of the market at a considerable discount. He died a comfortable and solvent publican, and his heirs came into possession of a good business. We cannot relate much as to his charities, or whether he left any bequests towards asylums or hospitals. He was a believer in the maxim that charity begins at home, and he practised it. Many people were given to detract "Paddy Ready Penny" for his close-fisted characteristics, but after all the old chap acted well, and his business is in the hands of his great-grandchildren, while the memory of the owner of "Cockle Hall" is well nigh extinct.

"I dare say, sir, you know that corner house and its history, as well as the neighbourhood in general," quoth the "Oldest Inhabitant," who dropped upon us on his return journey from the neighbourhood of the "Big Gun." "Well we confess, our old friend, that we have heard a good deal about it in our younger days, but it has nearly all

faded out of our memory, as we were such wild youths, and paid so little attention to gossip when school boys." "Ah, sir, the history of that house would fill three volumes, and it would take a hundred to hold half of what could be written with truth about the Island. Bless your heart, sir, people may talk as they like about the last of the Irish kings dying with Roderick O'Connor. Even in my early days Dublin could boast of half a dozen of monarchs, and the most noted of them ruled in the islands around the Bay. Dalkey had its kings and retainers, but Stephen Armitage, the pawnbroker, was nothing compared with the great MacDonnell with his sheriffs and bodyguard who ruled the road by the classic shores of the Tolka. Our kings are not yet extinct in Unknown Dublin, not to speak of other insular monarchs, like Pat Harrison, who only 'kicked the bucket' a few weeks ago on Tory Island, and who acknowledged no taxman, landlord, or queen. By acknowledging either, you see it would stultify his position as King of the Tories.

"Tell you about the corner house? Well, it's a long story; and as I would be unable to tell you all at this time of the day, I will, however, make a beginning by relating to you a few incidents connected with one or more of its occupants and outsiders. 'Tis now many, many years since that tall brick mansion was inhabited by a very clever and eccentric genius. He was a man of a most inventive turn of mind, a real mechanic, and withal a gentleman, as the term goes in these days. He was very fond of making models in cardboard and wood, which he previously sketched out on paper. Even when a boy he used to be amusing himself in cutting out patterns of mill wheels, spindles, pistons, coffer-dams, battering-rams, and safety-valves. His father, noticing the bent of his genius, articulated him when a little older to an engineer. An idea got into the young man's head that he could make a machine that could go of its own accord; but when he told people so, they only laughed at him, and said he was crazed. As time passed on, the young man came into possession of some money, which he devoted to his favourite studies. He heard that some one in England had made an engine to go by steam upon the water. 'Why not,' quoth the young man, 'make one to go upon the road?' To accomplish this, sir, he set about, and in a short time, not without some failures, he completed a road locomotive, to which was attached a tender and a couple of carriages. He had a workshop at the back of his house in Univalve-street, where he made many improvements upon his locomotive. How forgetful I am, to be sure! I never told you, sir, that the occupier of the corner house was known as Roger Villier Jasper, and was credited in my early days as the inventor of the first Irish road locomotive." "Did he make excursions?" "Oh, yes; many, sir. I remember going on one of his first trial trips along the Malahide road to Howth. The simple-minded Fingalians around by Kinsealy and Feltrim ran helter-skelter across the fields to witness the 'fiery chariot' that ran without horses, with the devil as engine-driver and his imps as stokers, and his sinful cargo behind the tender. It was a sight, to be sure, not easily to be forgotten. Mr. Jasper, sir, acted as engine-driver himself, and he stood in front with his hands upon a horizontal wheel, not unlike the wheel in a ship. By turning to the right or left he guided the engine, and applied the break when required. The locomotive itself was a very huge affair, and the wheels that supported it appeared to be nearly 2 ft. wide; as wide as they were, they made a tidy impression upon the road. It would have been wise if the Corporation of that day macadamised the streets with the aid of this broad-wheeled locomotive; no steam roller could have done better service. Oh, yes, sir, on several occasions it passed down the Mall and along the Quays, returning by the North-road to Univalve-street. Some busy-bodies began writing letters to the papers, saying that their horses were

frightened in the streets by the passing of the snorting engine—fellows, sir, that never rode a horse in their lives, though they might have held a horse's reins outside Dycer's or the Bank. Other wisacres in the Corporation brought up notices and proposed motions to summon Mr. Jasper to "the bar of the Council" to explain his authority, and to show how he obtained running powers over the broken shingle of the streets. Jasper laughed at their fantastic tricks; and, after a month's resolving, one wiser than the rest suggested that it would be more profitable to keep never minding the road engine, as it was saving the city a wonderful deal of expense in its action of a casual stone-crusher. Reason dawned at last upon the benighted understandings of the "Blunderbores," and all the civic snails drew in their horns.

"To be brief, Mr. Jasper expended the whole of his large fortune in endeavouring to perfect his road locomotive. Public spirit there was none, and assistance was not to be had, so the engine was laid up, and rusted in silence for some years. The inventor, however, did not let his brains rust. He projected many schemes in his own and the public interest in drainage, sewerage, water supply, and peat charcoal. Other water-wise men seized on some of these ideas, and appropriated them, fully realizing the saying—'Some men are born with money who have no brains, and those generally born with brains have no money.'

"I cannot say, sir, what became of Mr. Jasper, or whether he is alive or dead, or in exile. It is a long time now since I heard of him last. It is a pity indeed he did not succeed better. As for Univalve-street, it has much the same appearance that it had fifty years ago, when the natives rose in rebellion upon the 'Island,' and a military force was sent down from the Castle with the Town Major to arrest the Sovereign of the Sand Pits. Univalve-street, being on high ground, the forces formed into a hollow square in front of the brick mansion. The parapet of the historic house was mounted, but neither the eyeglass nor telescope of the commandant could focus the standpoint of the insolvent sovereign. Law and order were defeated, and the 'forlorn hope' marched back to Ship-street, leaving Univalve-street and its red-brick mansion towering in solitary grandeur above the mists of the Island.

"That is all I can relate this evening," said the "Oldest Inhabitant." Hailing a car that was passing, we both had a ride in to the Pillar, but what passed before we parted concerns nobody but ourselves and the "Oldest Inhabitant."

ARCHITECTURAL PERSPECTIVE.*

THE subject to which I propose this evening to direct your attention is one, I consider, of the greatest importance to us in the practice of our profession, and an intimate knowledge of which it is necessary for every architect to have. It is with diffidence that I venture to address you, as I know that the greater number here to-night are as conversant with or know more of the subject than myself. My remarks are intended for those who have not as yet studied Perspective, that I may give them some assistance and advice. It is, I regret to say, never, or almost never, taught to pupils in architects' offices; and the student, if he wishes to acquire a knowledge of it, must teach himself. The principal or his chief assistant gets up all the perspectives, and the pupil has thus no opportunity of acquiring an art so very simple and useful.

The science of Perspective owes its origin to the art of Painting, and is used to represent the effect presented to the eye by objects situated at different distances from the spectator. The ancients had some knowledge of perspective; Vitruvius, in his seventeenth book, remarks that it was taught to some extent in Greece by Democritus and Anaxagoras, who wrote treatises on the subject, of

* By Mr. J. L. Robinson. Read at meeting of Architectural Association of Ireland, January 9th, 1872.

which no traces now remain. Euclid and some Roman authors have also left various rules. Perspective was to some extent practised in the Roman Empire, but of (so to speak) a conventional description, such as may be seen in the Pompeian wall-decorations. Their ideas were in many respects very enlightened, as is fully exemplified in several of their landscape panels; yet they had not the knowledge which we possess of representing things as they really appear. They seem to have had a rough idea that the lines should take a sloping direction, but do not appear to have understood that they should meet in a point. The Chinese and Japanese also practise perspective, but their efforts in that direction are of a very conventional nature. Although the art of Painting may be traced to the earliest ages, the science of Perspective, as at present practised, is of comparatively recent origin, being first introduced with the revival of art in the thirteenth and fourteenth centuries. Both ancient and modern painters, in many cases, do not in their compositions rigidly comply with the rules of perspective, and, as a general rule, they fail in the proper representation of buildings or architectural details. Canaletti, of Venice, however, was an excellent perspective draughtsman, as also his pupils Guardi and Marieschi, whose views are faithful representations of the buildings they delineate. "A View in Venice," by the former artist, in the late Exhibition, is remarkable for the beauty and clearness of the colouring, and the accuracy and care with which the perspective has been drawn. Panini also, whose views of Rome ornament the various galleries of Europe (amongst others, our own National Gallery is fortunate in the possession of one of them), was an excellent perspective artist; so also Peter Neefs, and Steenwyck, a Dutch painter, whose pictures owe their chief attraction to his careful drawing of perspective. That of "The Palace of Dido," in the National Gallery, is an excellent example of his style.

In the preface to a Treatise on Perspective, by a Jesuit of Paris, the following passage occurs, which I consider so quaint and apposite that I trust you will excuse its introduction:—

"The principle or foundation from which perspective arises is the eye; an organ which Nature has endued with a greater share of vivacity and other perfections, than the rest of the senses; and which even holds the same advantages over them, that the soul does over the body. The like advantage does the art of perspective hold over the other mathematical arts; being confessedly the most elegant and agreeable, and affording more matter of entertainment, than all the rest. 'Tis the very soul of all painting; and that alone which can make the painter a master. 'Tis this must conduct him in the dispositions, heights, and proportions of his figures, buildings, moveables, and the other ornaments. 'Tis this must shew him what colors are to be deep, or faint, or vivid, or dull, where each is to be applied; what to be finished up, and what only touched; where light is to be bestowed, and where not; in a word, 'tis this begins and ends the painting. Without the assistance of perspective, the best master must make as many faults as strokes; and especially in buildings, and some other enrichments; which are things I find some of our most reputable painters so horribly defective in, that this has been one great motive to my undertaking the following work; wherein their errors will be shewn, without naming the authors; and novices instructed how to avoid the like. The most consummate master is tied to the strict observation of every one of these rules; on pain of pleasing none but the ignorant; and an indifferent painter (or architect) may be told this to his comfort, that if he make himself a thorough master of these rules he shall be able to do wonders."

Every word of the foregoing I will heartily endorse, as I consider it to apply just as well now as when written, three hundred years ago.

Numerous writers of more or less note and ability have treated the subject, whose names, were I to enumerate them, would shew you that the greatest painters and architects have devoted to it great care and attention. Some works I have been enabled to lay on the table for your inspection, a cursory glance at which will convince you of the different methods by

which various authors arrive at the same results, some more or less simple, whilst others are almost impossible to understand.

Some authors treat perspective as Euclid did geometry, and divide it into a number of dry and abstruse mathematical problems, which I consider a very confusing and imperfect method, and one that I would almost defy any student to master without losing an immense deal of time in study, in comparison with the method that I adopt, which is so simple that it may be applied in every case with the greatest ease, with few lines, and may be learned in a very short time. It would be impossible in a short paper like this to give examples of every case that would be likely to arise. I will explain to you the rules, and give some examples that, with some study and consideration, may be applied in almost all cases.

Before entering fully on the subject, it is necessary that I should explain some terms and lines which form the groundwork or foundation of the science, if such it may be called. We will fancy a sheet of glass held up between any object and the eye; if we trace its outline on the glass as we see it, we will have a perspective view. In fig. 1 on accompanying lithograph it will be seen that rays or lines proceed from the object to the eye; and let 2 be the position of the glass, it will be seen that if we wish to diminish or increase the size of the picture we have but to advance or withdraw the glass or plane interposed between us and the object. It is also obvious that all the rays intercept the glass in the same proportion, no matter what its position. The glass is called, in perspective, the plane of the picture or picture-plane, being the surface on which the view or picture is delineated. The horizontal line, or horizon, is a line the height of the spectator's eye; whether it be placed higher or lower in the picture depends on the position from which the object is viewed, whether from an eminence or a hollow. The horizontal line is always at right angles with the perpendicular. In fig. 1, AB is the horizontal line. The point of sight is the position of the spectator, or the point from which the object is supposed to be viewed. Some judgment is necessary in the selection of the point of sight, that the building may look to the best advantage. The distance at which it is usually placed is three times the height of the building. No fixed rule can be laid down, as circumstances will dictate its position—as in street views or other confined situations. In looking at all objects, it will be seen that the horizontal lines of the building (except in what is called parallel perspective) have a tendency to converge more or less according to the angle at which the building is viewed; if those lines be produced they will be found to meet, always on the horizon. Such points are called vanishing points. Let CDE be the plan of a cube, fig. 2, and P the point of sight. To find the picture plane, draw the lines—or, as they are called, visual rays— CP , EP , and FP ; bisect the angle formed by the extreme visual rays at P , and at the point F draw AB at right angles to the line of bisection. AB is the picture plane. To find the vanishing points through the point of sight, draw two lines parallel to the two sides of the cube until they intersect the picture plane. The points of intersection will be the vanishing points. So far for the preliminary work. In order now to draw the cube, draw the horizontal line, AB (fig. 3), draw up vertical lines from C , F , and E in plan; let O be the ground line, and on the line CD measure off CO the height of the cube to the same scale as the plan has been drawn; now draw lines from D and O to the vanishing points, and the drawing is finished.

The point C is situated on what is called the ground line, and the aspect of the building will, in a great measure, depend on the height at which the horizontal line is fixed over the ground line; 5 ft. 6 in.—the average height of the human eye is that usually adopted; but the artist is at full liberty to chose the height at which the building will appear to

the best advantage. When the horizontal line is taken at a greater height than the building, it is called a bird's-eye view, as the cube is shewn in fig. 4. We will now take a more elaborate object—a house with gables. The lines are found in the very same manner as the cube, and the drawing proceeded with as in figs. 5 and 6. In order to shew how in perspective there are various means of arriving at the same end, I will explain two methods of finding the centres of the gables: by one, draw the centre line on the plan, draw a visual ray and bring it down as the other lines. The second method is to draw the two diagonals of the gable, and the point of their intersection is the centre of the gable. To draw the gable, take off the elevation, the height of the eave and apex, and draw the lines to the vanishing point; connect the three points, and the feat is accomplished. In making perspective drawings by the above methods, you will find the view will be of a smaller size than the elevation; in order to obviate this, and make the perspective drawing to a larger scale, the picture line is drawn through the building, or, if still larger, at the back of it. The heights are measured off at the point where this line cuts the plan, as in figs. 5 and 7. If it is desired to make the perspective to a smaller scale, the picture line is advanced to the front as the line C , fig. 5. The heights are measured off a line found by producing one side of the plan to cut the picture line. No matter how many picture lines we may draw, they would be all divided in the same relative proportion, as also the views that might be made from them.

To draw an octagon, fig. 8, make a plan of the octagon and produce four of the sides to form a square; proceed as with the square; find points of the octagon in the sides of the square and connect them, thus the octagon is formed. This method will be found very useful in drawing bay-windows, &c. Cylinders may be drawn in the same manner. To draw a spire, proceed as in the other cases; draw on the plan, fig. 9, a line through the centre of the tower, parallel to one of the sides to cut the picture line, draw a vertical line from it and measure off the height of spire; draw a line to the vanishing point, and where that line cuts the visual line of the centre of spire, will give its height. In order to draw ornamental pavements, draw the diagonal as in fig. 10; divide the picture line, and draw lines to the vanishing point; draw the diagonal in perspective, and draw lines through the points where it cuts the other lines of the pavement.

Interior perspectives are governed by the very same rules as exterior, as will be seen by a glance at fig. 11, where the visual rays are brought down to the picture line $A. B$. The point of sight in interior views is also the vanishing point. Some care must be used in selecting it. It must not be taken in the centre of the room, for then both sides will appear exactly alike, and will have an exceedingly unpleasant effect. It is better to have one side of the building seen as much as possible, at the same time indicating the architectural features of the other. The artist must, however, use his own judgment to suit the case. The arch, of no matter what form, is most difficult to be drawn well in perspective, the method is shewn in fig. 12; divide the arch into ordinates on plan and elevation, and find the perspective points where they cut one another. If a line be drawn through those different points, it will give the perspective aspect of the arch, it requires great practice to do this, as it must be drawn with a steady hand. I may here allude to a kind of perspective largely indulged in by engineers, which has nothing to recommend it but its hideousness and absurdity, as it is neither one thing nor the other, need I say that I mean isometrical perspective, or as it is more properly called isometrical projection, which I hope to see few of you waste your time upon; its only advantage is that a scale may be applied to it, which is impossible in true perspective.

It is a great error to be careless in the first

instance with a perspective, and then bestow a great amount of work on the details. Get in the main lines correctly, and after some practice you will be enabled to fill in the details without rules by merely getting a few main points. Of course the portion nearest the eye should be drawn neatly, and with greater care than the back-ground, which may be treated in a comparatively sketchy manner.

Architects, as a general rule, are too prone to confine themselves to geometrical drawings, which, though exceedingly useful and indispensable, are such that none but a professional mind can grasp, and that few of the uninitiated can understand. We all know who have tried the experiment how difficult, almost impossible, it is to impress a client with the slightest notion of what we mean by an elevation or plan. It is from a want of perspective knowledge not only with the profession, but with the public generally, that is mainly derived the odious custom of having the front of the detached or semi-detached suburban villas of red brick of the most ambitious design, whilst the flank and rear walls are simply dashed, or, still worse, compo'd down and "struck out to imitate stone." This generally arises from an elevation of the front being submitted to the client whilst the sides and back are allowed to shift for themselves. Both architect and employer forget that, when built, it can never possibly appear as on paper. If we cannot have the funds to build such houses of red brick all round, let us have all the walls of good Dublin stock bricks, well designed and of good outline, without wiggling or shams of any kind; and I have no doubt but that the public would prefer them to the ridiculous mushroom structures that are springing up round the city, whose appearance "cannot but make the judicious grieve."

An architect should, when making a geometrical drawing of no matter how trifling an object, have the perspective effect of it in his mind's eye, and he will never make a mistake, or be disappointed when he sees his design put into execution. Some I have known who, when they are making a design, make a rough perspective sketch on the margin of the paper, to give themselves an idea of the effect, which I consider an excellent practice, and worthy of imitation.

There is no greater aid to the study of perspective than that of sketching from nature, or by a close study of completed buildings. If the artist has a good eye and steady hand, he will see how objects shew in perspective, and will after a while be enabled to make perspective views untrammelled by any rules save those of good taste. What can be more agreeable to the architect or artist than to ramble about, sketch-book in hand, and sketch any object that strikes his fancy, and thus lay by a store of pleasant souvenirs or useful hints which he may have received on his travels? It is by such means that the mind is to be enlarged and experience gained.

I would now caution you against a fault which I would almost consider criminal—namely, the deliberate falsification of perspective drawings which some indulge in, in order to give to their designs a better aspect than the working drawings. This I consider—and I know you will agree with me—is a pernicious and dishonest habit, and likely to lead the men who are guilty of it to shame and exposure. It is mostly resorted to in getting up competition drawings; others—and notably the illustrators in the professional journals,—when they introduce figures in the foreground of their drawings, make them veritable pigmies, ranging from 2 ft. 6 in. to 4 ft. in height: this is done in order to make the building appear of far greater size than it actually is; the cheat is, however, soon detected by comparing the size of the doors and windows and other details with the figures.

And lastly, a word with regard to that not least important branch of the subject—the style of the drawings. Some architects draw them in pencil pure and simple, and I con-

sider few drawings have a neater and better effect than a neatly-drawn pencil sketch; others outline in pencil, Indian ink, or brown ink, and tint—much can be done in this way by a clever colorist; and others etch in Indian ink, writing ink, and brown ink. Etched drawings are very effective, are great favorites, and are open to a wonderful variety of treatment. What can be more striking than the different styles of line drawings practised by such artists as Messrs. Street, Shaw, Godwin, Seddon, and Brooks, whose styles we are all so familiar with through the medium of that invaluable invention, photolithography? You are all conversant with Mr. Drew's admirable pen-and-ink sketches, some of which adorn our walls, and which will favourably compare with those English artists I have named.

In conclusion, I will re-echo the words of our worthy president—"Sketch, sketch, and learn to sketch well"; and if my few remarks this night will serve to direct your attention to the study of that all-important branch of our profession—Perspective—my efforts will not be unrewarded.

CIVIC LYRICS.—No. XXIX.

"ONE OF THEM."

One more importunate,
Brazen in face—
Say not unfortunate,
He's got a place.

Speak of him tenderly,
Don't touch the bear;
Reverse of slenderly,
Not young or fair.

Look at that yellow
Blotchy-face fellow
Whose Civic employment
Makes him feel easy,
And whose chief enjoyment
Is to be lazy.

Come to him peacefully,
Speak to him gracefully;
Not as a novice Sir,
But fully admitting,
In virtue of sitting,
That he's an Officer.

Hear his tautology,
Make an apology
For so distressing him;
Praise his efficiency
And self-sufficiency
When you're addressing him.

Think on the system well—
Spirits inflammable
Never brooked out of hell
Jobbing more damnable.

Nought left but devilry,
Gone is our chivalry;
Mucksticks creep on I
Blockheads and drunkards may
Get public place and pay,
One after one.

CIVIL.

APPLICATION OF STEEL TO RAILWAY PLANT.

THE directors of the Great Southern and Western Railway of Ireland have notified that they will exhibit at the London International Exhibition of this year specimens of cast steel crank-axes, springs, and other locomotive fittings and appliances, as used by their engineer, Mr. McDonnell. A complete series of steel goods will also be exhibited on the part of the London and North-Western Railway Locomotive Works at Crewe, comprising boilers, fire-boxes, and tubes; also samples of ores, fluxes, and fuel employed in their manufacture. On the part of other railway companies there will also be several similar exhibits of railway plant, showing the application of steel to various purposes in connection. The importance of steel in its application to general railway uses cannot be over-estimated, and it is probable that before another decade the principal railway lines in Great Britain will be laid with steel rails. The first cost at present prices for steel plant is, no doubt,

considerable; but when considered in respect to wear and tear, there is no comparison as to durability. Steel rails will last for an indefinite period, and will in consequence obviate the necessity of the replacement that so often takes place at present. The sleepers will, of course, need to be replaced from time to time, but we do not doubt but in this particular some improvements will take place which will render repair not of so frequent occurrence. We are glad to see the directors of our great Irish line putting in an appearance, and keeping pace with the times in the matter of steel goods. In the matter of carriage construction and internal fittings, in view of the comfort of railway passengers, there is room for much improvement on our Irish lines, and we hope to see the fittings and upholstering in this branch of railway trade receiving a little more attention than seems to be devoted to it.

ARCHITECTURAL ASSOCIATION (ENGLAND).

On Friday, January 10th, Professor Kerr read a very practical and interesting paper on "The Design of Small Country Houses," full of sound advice; and on Monday, the 13th, Mr. Roger J. Smith continued his lectures on "Professional Practice." The last lecture related to the practice of dealing with money, and it was on a par with the previous admirable lecture by this architect.

CORRESPONDENCE.

THE JUNIOR ARCHITECTURAL ASSOCIATION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—May I ask, through the medium of the IRISH BUILDER, if the Junior Association lately formed is engaged in any particular way at present? They began with a flourish, but I do not remember seeing any signs of their continued existence since the President made his *début*. With two architectural institutes in our midst, there ought to be more activity than there is. Perhaps I am of a too sanguine disposition, but the interest I feel in the architectural reputation of this city in past times must in a manner be urged as my excuse. We cannot, however, live on the glory of the past if we fail to add to it by our labours in the present. I am, sir, your obedient servant,

AN ARCHITECTURAL ASSISTANT.

Dublin, January 10th, 1873.

[There has not been much time lost yet. Our correspondent must not be impatient with the Junior body.]

DUBLIN AND WICKLOW GRANITE.

TO THE EDITOR OF THE IRISH BUILDER.

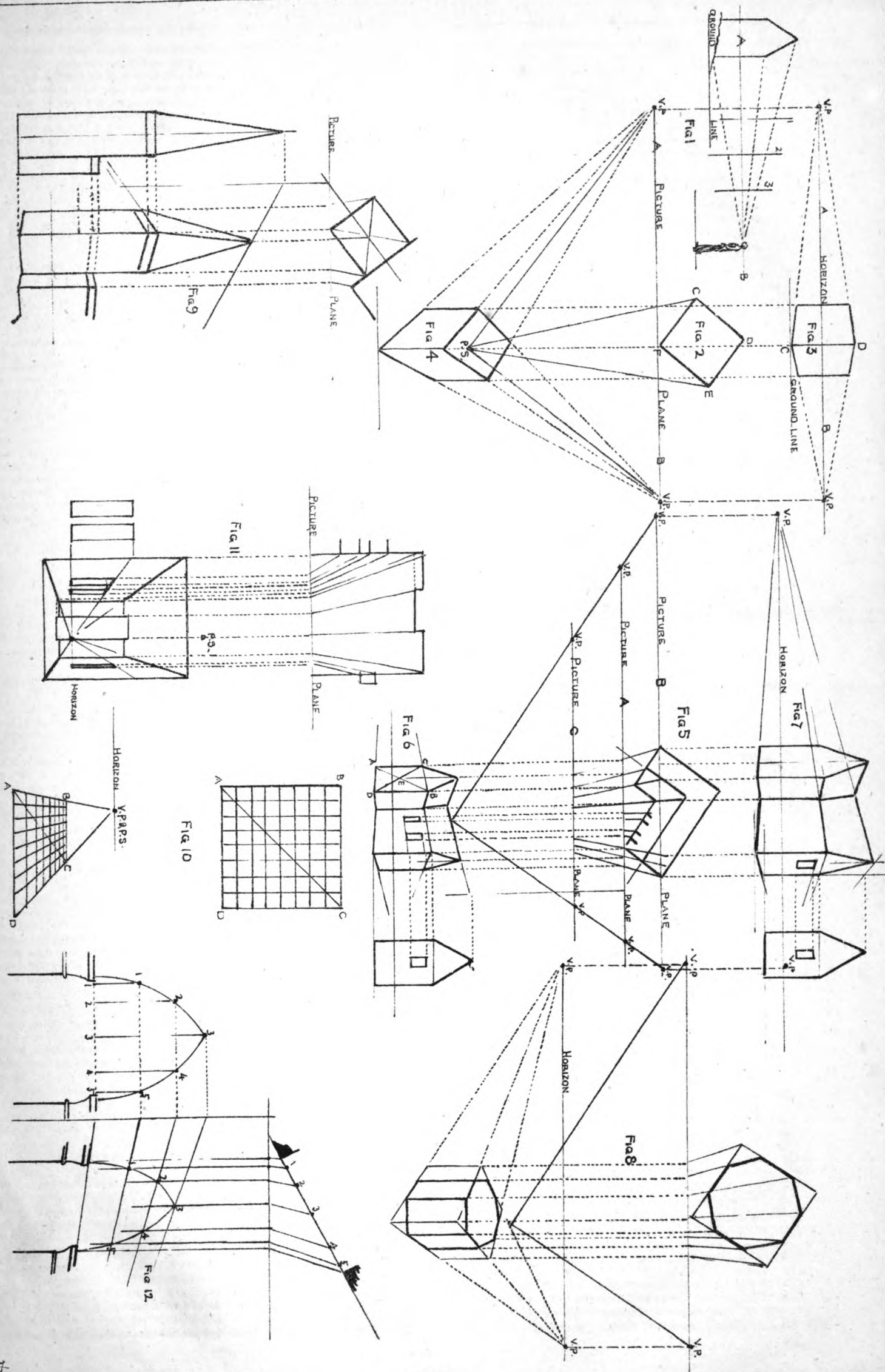
SIR,—Will some of your workmen readers among the stonemason class inform me, through your pages, what description of granite composes the front of Powerscourt House, William-street, and was it the same kind that Gandon, the architect, used in some of the fronts of the Custom House and also in Carlisle Bridge? In a word, was it Wicklow, or Killiney, or old Dunleary (Kingstown) granite? I would also feel obliged in being informed to what extent do their components differ, in respect to quartz, felspar, and mica, &c.—Yours, &c.,

CLERK OF WORKS.

SLUSH WORK.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The letter in your last issue signed "A Stonemason" contains many truths; but it is not only in his branch of trade, but in that of the carpenters, joiners, and bricklayers similar abuses exist. The work executed in many shops that I have passed through was nothing short of disgraceful—nothing but "slushing" from Monday morning until Saturday afternoon. And who is to blame, let me ask? Not only the employer, but the low, unprincipled foremen in these shops, some of whom could not tell the difference between an oval and an ellipse, and if asked in technical language how to prove a plumb rule, would break down in the attempt. After pay on Saturdays, when in the tap, I have seen some of these fellows "setting out" lines with their index finger dipped



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in the spilt beer. They are very communicative about what they don't know; and as for getting methods of proof from them, you might as well look for the philosopher's stone. These clever foremen are kept in constant employment by their masters, not for their ability to direct, but for their ability to drive, and in this respect they are better fitted for carters than foremen. Bad foremen, sir, create bad workmen. bad workmen keep in constant work bad foremen, and both create bad employers and indifferent architects.—Yours, &c.,

AN OPERATIVE CARPENTER.

SCAMP WORK.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I read with interest the letter of "A Stone-cutter" in your last. The evil he complains of is, alas, too general. There are scamps in all trades, and the work that is not inaptly called "scamped" is performed by men who are little more than scamps. Our "jerry" class of builders are the greater scamps of the two. I only wish from my heart that our district surveyors (if we have such officials) would look closely after the class of houses that are "running up" every season in our northern and southern suburbs. It is scarcely an exaggeration, sir, to say that two-thirds of the bricklaying work executed at present is "scamped," and perforce nine-tenths of our bricklayers are "scamps." Some, of course, are not scamp at heart; but the evil system, if not soon put a stop to, will turn the whole body into an unmitigated trade of "scamps." On another occasion I will, sir, with your permission, lead the public into a secret or two concerning the practice of stonecutting and bricklaying in the city and provinces.—Your obedient servant,

A BRICKLAYER.

ARCHITECTURAL ASSOCIATION OF IRELAND.

A GENERAL meeting was held on Thursday evening, the 9th instant, the president, Mr. J. J. O'Callaghan, in the chair.

The minutes of previous meeting were read and confirmed.

A ballot took place for the election of members (Messrs. Fennell and Keogh being appointed scrutineers), which resulted in the election of E. L. Clarke, A. E. Murray, and J. H. Browne.

The following gentlemen were proposed as members—R. R. Brash, J. Dooling, — Copping, W. J. Symes, J. Farrall, and Charles Spadacinni.

The following Registry rules, being approved of by the committee, were submitted to the general meeting and confirmed:—

1. That the Registry be open, with a fee, to all members of the association quiring engagements.
2. That the assistants should state salary required and qualifications at time of registry.
3. That, should an assistant be engaged through the Registry or otherwise, he shall let the secretaries know in writing, that his name may be withdrawn.
4. That practising architects be noticed by advertisement that the Registry is open, and be requested to apply to the secretaries should they require assistants.

Mr. J. L. Robinson, hon. sec., then read a paper on "Architectural Perspective," which will be found on another page. A discussion followed.

Mr. Longfield, hon. sec., said that sketching was of very great assistance in the study of perspective, as many features, such as arches, &c., were far better drawn by hand and eye than by rules, which he considered should only be had recourse to in getting in the outline.

Mr. Earley said that a drawing done by rule had got a stiffness which sketching was totally free from. He was compelled to differ from Mr. Robinson with regard to isometrical perspective, which he, as a practical man, found to be of the greatest use in giving a workman an idea of what he was required to do, in which geometrical drawings, no matter how well done, often failed.

Mr. Holmes, in proposing a vote of thanks to Mr. Robinson for his paper, said that he considered isometrical projection very useful

for engineering work or carpentry, such as roofs and trussed bridges, &c.

Mr. Earley seconded the vote of thanks.

The president, in putting the vote to the meeting, said that he agreed with Mr. Robinson in almost all he had said. As for isometrical perspective, he did not like it at all, even as Mr. Earley applied it. He found full-sized detail drawings never to fail with any workman.

Mr. Robinson, in returning thanks, said he was sensible of their kindness, and felt that he did not deserve their thanks, as his paper was, he considered, a very crude production; but, being his first effort in that direction, he hoped they would excuse its shortcomings.

A vote of thanks was then passed to the president, after which the proceedings terminated.

The next general meeting will be held on the 30th inst., when Mr. E. Trevor Owen will read a paper on "Architectural Details in Common Use."

KINGSTOWN AND DALKEY SEWERAGE SCHEMES.

WE trust that we are not going to have a triangular duel fought over the sewerage schemes of Kingstown, Blackrock, and Dalkey. The whole of the marine townships could very well join issue for one entire and well-considered system. Our objections have already been stated, but our objections do not deny the necessity that exists for effecting a practical sewerage scheme, embracing the whole of the townships.

In Mr. McEvoy's re-election as Chairman of the Town Commissioners of Kingstown, we believe that the interests in general of the townships will be benefited, and his greatest opponents must allow him his meed of praise, no matter what the length of his stake may be in the neighbourhood.

Local boards are, of late, in general inclined to forget their functions, and instead of being rivals in improving measures, are degenerating into factious bodies, and are doing their best to obstruct each other. The ratepayers are in the end the sufferers, and the public health becomes continually endangered.

In what we say now, as well as in what we have already said, we hope that we may be proven to be false prophets.

Once more we repeat, if the combined sewage of the marine townships is cast unutilised into the Bay of Dublin, the beauty of the sands will have departed for ever, and wealth and fashion will migrate, leaving Kingstown and adjacent districts to make up its losses by developing other resources compatible with its existence, not as a Kingstown of the past, but as an enlarged Ringsend of the present day.

NEW CORN STORE, LIMERICK.

A CORN store upon a very extensive scale, and with all the modern appliances, is about to be erected at Limerick, for Messrs. Bannatyne, merchants.

The site of the proposed store is within 50 yards of the Limerick Docks, presenting a river frontage of 135 ft. by 60 ft. in width, and the store, when completed, will form a very imposing and prominent feature upon entering the port. The entire is to be built of local limestone, with chiselled strings, barges, eave-course, &c., and fire-brick arches to door and window openings. It is to be five storeys in height, independent of basement. The floors throughout are of timber, supported upon metal columns, with the exception of end wing, which is built upon the American system of "bins," extending the entire height of store, and eight in number, into which the corn is let from the top loft, and drawn off at the bottom by means of a timber shoot or outlet, on to a series of endless bands about 18 in. wide, worked by machinery, conveying the corn to elevators or hoists to top floor, where a similar system of bands carries the corn to any part of the store

required, from which it is let down to the several floors beneath through timber shoots, or else conveyed to the end wing, where it can be dropped into the "bins" as before.

The exterior presents a good bold appearance, each wing fronting the river being gabled with arched recess the entire height, and massive square tower 70 ft. high, of Italian character, with metal balcony supported upon large projecting corbels, and gabled on four sides with semicircular apses (in one of which it is proposed to have an illuminated clock). The strings of main building are carried round same, and from its angular position at corner of main block nearest the dock, forms a very striking feature in each of the principal elevations.

The excavations are being made, and the tender of Messrs. McCarthy and Guerin, of Limerick, amounting to £6,295, has been accepted for the erection of the building.

Mr. William Sidney Cox, of Limerick, is the architect, under whose superintendence the works are being carried out.

The list of tenders will be found in another column.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a meeting of this body, held on the 6th inst., Mr. John Gibson, vice-president, in the chair, a paper on "Arbitrations" was read by Mr. Bannister Fletcher. The author commented on the extent to which arbitrations are sanctioned and affected by acts of parliament, and also reviewed the matters relating to the architect's profession. The rules, modes of procedure, notices, submissions, evidence, and other topics, were treated upon, the subject embracing a rather comprehensive digest of the law and practice of arbitrations. The demise of the following members of the institute during the preceding year was announced—Mr. R. Banks, Mr. R. P. Browne, and Mr. W. Slater. Mr. F. R. Haswell, of North Shields, was elected a fellow; and Mr. E. P. Wilkins, of Bedford-row, London, an associate of the institute.

NATIVE ART.

THE following paragraph, which we clip from a Dublin contemporary, will no doubt illustrate Irish Art in a lower position than that in which it was supposed to exist. However creditable the work of Mr. Curry may be, it is deplorable that its disposal must depend upon the chances of a lottery. If the work is a really deserving and creditable performance, why do not some of the dignitaries of the Roman Catholic Church procure it for some of their churches instead of allowing the name of native art to be degraded in the manner proposed. Poor Curry! we suppose the curse of Swift is upon him. Had he sculptured an Italian courtesan or a heathen deity out of Carrara marble on the banks of the Tiber, there would be no necessity for this lottery on the banks of the Boyne. Native artists must live, however; but we do not believe that Irish Art can ever be elevated by the medium of lotteries. This is the paragraph:—

"We have pleasure in calling the attention of the public to the opportunity which now offers of acquiring possession of two splendid specimens of native Irish art. They are the colossal statues of St. Patrick and St. Joseph, from the chisel of Mr. Thomas Curry, of Navan. These noble sculptures have excited the unqualified admiration of all who have inspected them, and have also elicited the most flattering criticism from the press of the country. A committee of gentlemen, duly appreciating the talent displayed in the execution of these works, and anxious to secure them fitting place and prominence, have formed themselves into a committee for the purpose of effecting their sale by lottery. It is proposed to issue a limited number of tickets at five shillings each, and on a day fixed the statues will be drawn for on the Art Union system. We heartily join the committee in their appeal to the public spirit, artistic taste, patriotism, and religious feeling of the country, and hope the artist and his works will meet the recognition they deserve."

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood is rather heavy this month, and is chiefly occupied with the treatment of polemical and religious subjects. "Sir Tray, an Arthurian Idyll," is a rather clever parody on the Poet Laureate's latest poem. To some readers this month's issue will appear dull, while to another class of readers it may seem interesting. There is no accounting for tastes, for it has been truly said, "What's one man's meat is another man's poison."

Frazer contains some interesting contributions. "A Visit to the Shamyl's Country in the Autumn of 1870," and "Some Curiosities of Criticism," are among the attractive papers. Mr. Francis Galton returns to his subject of "Hereditary Improvement." He maintains that "it is feasible to improve the race of man by a system which should be perfectly in accordance with the moral sense of the present time." The mode by which he proposes to do this contains some both strange and sound thoughts, but the reader interested will probably consult the paper. The opening paper of the magazine furnishes the editor's address delivered on the Irish question in America last month. Mr. Leslie Stephens deals with the characteristics of Shaftesbury. There is also a spirited article on M. Thiers.

Temple Bar continues Mr. Wilkie Collins's novel, "The New Magdalen;" and we have the first chapter of a "Vagabond Heroine." Mr. Frank Buckland, of *Land and Water* fame, contributes "Reminiscences of Winchester College Riots." The remaining papers, viz., "A Hundred Years Ago," "The Maori Mythology," and "Stage Coaches," are well worth perusal.

The Gentleman's Magazine contains a critique on Tennyson's last poem. Mr. George Smith contributes a good article on "The Potter of Tours," and Miss Edwards a very pleasant one on "Leaves from a Lost Diary." Joaquin Miller's "Isles of the Amazons" is continued, and the present poem is equal to preceding ones. "Stranger than Fiction," the serial story, maintains its interest. The present number is also noticeable for a contribution by Mr. Charles Bradlaugh, the London "Iconoclast"; the article is entitled "The Republican Impeachment," and it is intended as a reply by the author to an article in a previous issue, dealing with his opinions on the House of Brunswick.

Cornhill presents us some capital papers this month. Mr. C. Kingsley's paper on "Heroism" will charm some minds, while the scientific reader will be equally charmed by an instructive paper on "The Recent Star-shower, and Star-showers Generally." There are also papers on "An Ugly Dog," "The Marriage of the Emperor of China," and the opening chapters of a new serial story. "Old Kensington," which is running on for some months, is still more absorbing as it draws towards its end.

Colburn's New Monthly has a story of Irish life, entitled "Fairy Fenella." "Love-making under Difficulties" is another Celtic contribution which will amuse. Pat is the boy for making love: even with an empty stomach he is still a master of the situation, with his smothering blarney and bothering ways. "The House in Stamford-street, Blackfriars," will interest London readers most. Here in Ireland we have any amount of haunted houses, and haunted men and women also: we could spare a few of them. "The Clown's Story," "Pantomime Night," and "Grannie's Dream," add to the interest of the present number.

Macmillan is an excellent number. From an Irish point of view the magazine will have an interest for the paper of Mr. Lecky, author of "Leaders of Public Opinion in Ireland." Mr. Lecky deals with Mr. Froude's recent work on the "English in Ireland." Politically we refrain from dealing with the question; but, historically speaking, we think Mr. Froude has committed some grave mistakes and drawn some very

wrong and most passionate conclusions. We refer the Irish reader, irrespective of sect or party, to the articles by Mr. Lecky. All will not agree with him perhaps, no more than with Mr. Froude; but his article is a clever contribution withal. Among the other articles are "The Constitutional Government in France," by C. J. Wallis, evidencing foresight and thought; and "The Two Marys," by Mrs. Oliphant.

St. James's contains an interesting story in "The Adventures of Three Englishmen and Three Russians in South Africa." Woodcuts representing the adventures accompany the text. The serial story of "The Cravens of Cravenscroft" continues well. M. Erckmann Chatrian's story of "The Two Brothers" proceeds impressively, "The Romance of Colonization" is also worthy of note.

The Argosy is up to the average. Johnny Ludlow contributes "Our First Term at Oxford" and the editor, Mrs. Henry Wood, gives the opening chapter of a new story entitled "The Master of Greylands." "Richard Van Werter" is a valuable contribution. There are also two fine sonnets by Christiana G. Rossetti.

London Society as usual contains some very good illustrations. Mr. Escott furnishes a good critique on the merit of the novels of Lever and Marryat under the title of "Land and Sea." We have also a criticism on Tennyson's new poem. "Leaf by Leaf and Tear by Tear" is good, and so is "Lady Dugdale's Diamonds." There is an opening chapter of a novel by Florence Marryat, with some minor contributions.

Belgravia is a very good shilling's worth this month. Mr. George Augustus Sala contributes the "Handsome Housekeeper," and succeeds, as he generally does, in making it pleasant reading. "Christmas in Russia" and the "Clerk's Daughter" are among the other good papers. As a whole, the magazine is a good number.

Transatlantic deals, as usual, with American periodical literature, and furnishes some first-rate selections from other magazines. The noticeable papers are Professor Maguire's "Biography of Sir Walter Raleigh;" "My Life on the Plain," by General Castro; a "Pilgrimage to Peking," by the Rev. E. W. Styles; and there are also some good verses on *Eureka* by Dr. Holland.

Et-Cetera, last though not least, keeps up its promise still and presents its readers with a fair quantity of good reading. The following papers are of good quality—"Dr. Doremer's Hobby," by F. Frost, "Women's Sphere." There is also a little poem entitled "New Year's Eve;" though not of a very high order, yet it breathes a good spirit. The present number is varied, and is therefore suited to the tastes of many readers.

"THE QUERIST."

BY GEORGE BERKELEY, BISHOP OF CLOYNE.

(With Notes by "Dublinensis.")

"FIRST PUBLISHED A.D. MDCCXXXV."

WHETHER, if we had a national bank, and our present cash (small as it is) were put into the most convenient shape, men should hear any public complaints for want of money?

Whether all circulation be not alike a circulation of credit, whatsoever medium (metal or paper) is employed; and whether gold be any more than credit for so much power?

Whether the wealth of the richest nations in Christendom doth not consist in paper vastly more than gold and silver?

Whether Lord Clarendon doth not aver of his own knowledge that the Prince of Orange, with the best credit and the assistance of the richest men in Amsterdam, was above ten days endeavouring to raise twenty thousand pounds in specie without being able to raise half the sum in all that time? (See Clarendon's History.)

Supposing there had been hitherto no

such thing as a bank, and the question were now first proposed, whether it would be safer to circulate unlimited bills or bills to a limited value on the public credit of the community, what would men think?

Whether the maxim—"What is everybody's business is nobody's" prevails in any country under the sun more than in Ireland? [In the ordinary acceptation the maxim still prevails to a great extent. However, everybody's business ought to be industry, and nobody could possibly be injured in following such a good example, whether independent or not.]

Whether the united stock of a nation be not the best security? And whether anything but ruin of the state can produce a national bankruptcy? [There are many causes that lead to the ruin of a state that might be easily prevented. Even independent of a universal bankruptcy, there are numerous chronic evils which take in the aggregate spoil, ruin, desolation, and death to thousands of the population, though the state escapes any great loss. The fortune of a state are more easily retrieved than that of individuals.]

Whether the total sum of the public treasure, power, and wisdom, all co-operating, be not most likely to establish a bank of credit sufficient to answer the ends, relieve the wants, and satisfy the scruples of all people? [It ought, yet it miserably falls short of fulfilling these conditions, because the prime objects of all governments are not embodied in our laws, nor are the administration of the laws always, whenever good, in accordance with their spirit.]

Whether London is not to be as the metropolis of Ireland? And whether our wealth (such as it is) doth not circulate through London and throughout England as freely as that of any part of his majesty's dominions?

Whether therefore it be not evidently the interest of the people of England to encourage rather than oppose a national bank in the kingdom, as well as every other means for advancing our wealth which shall not impair their own?

Whether it is not our interest to be useful to them rather than rival them, and whether in that case we may not be sure of their good offices?

Whether we can propose to thrive so long as we entertain a wrong-headed distrust of England?

Whether, as a national bank would encrease our industry and that our wealth, England may not be a proportionate gainer? And whether we should not consider the gains of our mother country as some accession to our own?

Whether there be any difficulty in comprehending that the whole wealth of the nation is in truth the stock of a national bank? And whether any more than the right comprehension of this be necessary to make all men easy with regard to its credit?

Whether the prejudices about gold and silver are not strong, but whether they are not still prejudices? [Notwithstanding weight, difficulty of transfer, and base coinage, gold and even silver beget very little real prejudice as a circulating medium. Paper is very handy and valuable in quiet times; and though it is indispensable to modern transactions, it has and will still continue to beget more prejudices than ever.]

Whether paper doth not by its stamp and signature acquire a local value and become as precious and scarce as gold. And whether it be not much fitter to circulate large sums, and therefore preferable to gold? [Preferable in the one particular.]

Whether it doth not much import to have a right conception of money. And whether its true and just idea be not that of a ticket entitling to power and fitted to record and transfer such power?

Though the Bank of Amsterdam doth very rarely if it all pay out money, yet whether every man possessed of specie be not ready to convert it into paper, and act as cashier to

the bank? And, whether, from the same motive, every monied man throughout this kingdom would not be cashier to our national bank?

Whether we may not obtain that as friends which it is vain to hope for as rivals? [Very often; yet withal an honest competition is wholesome, and is not inaptly termed the life of trade.]

Whether in every instance by which we prejudice England we do not in a greater degree prejudice ourselves?

Whether in the rude original of society the first step was not the exchanging of commodities, the next the substituting of metals by weight as the common medium of circulation, after this the making use of coin, lastly a further refinement by the use of paper with proper marks and signatures? And whether this as it is the last so it be not the greatest improvement? [Barter exists to a great extent in the British Islands, which are supposed to be civilised, as well as among African tribes. The Truck system is one of the worst kinds of barter, and many of our great railways lines were constructed by adopting the truck or barter system in its worst forms. Unwholesome food and drinks, and bad wearing apparel and utensils, was given to the labourer in exchange for his heavy and honest labour. The navy experienced some of the improvements of paper, not the bank note exchange, but the contractor or his agent's ticket for the "Tommy shop." He seldom or ever had the pleasure of feeling the pleasurable emotion begot in hardly the last refinement of our bank paper currency, which is nevertheless an improvement and a profit under certain conditions.]

Whether we are not, in fact, the only people who may be said to starve in the midst of plenty? [No, not the only people, though we suffer to a great extent through want, though the means to create abundance is lying idle within reach of us.]

Whether there can be a worse sign than that people should quit their country for a livelihood? Though men often leave their country for health, or pleasure, or riches, yet to leave it merely for a livelihood, whether this be not exceeding bad, and sheweth some peculiar mismanagement? [Verily it doth show exceeding bad management, and this peculiar bad management has existed from Bishop Berkeley's time until the present year, when hundreds are still leaving the country in search of a livelihood that they cannot procure at home.]

Whether, in order to redress our evils, artificial helps are not most wanted in a land where industry is most against the native grain of the people? [There were great checks to efforts of industry on the part of the tillers of the soil in Berkeley's day, and all these impediments are not yet removed. In a general way there are little obstacles at present, save want of enterprise and capital. A little artificial aid would be most judicious if directed in the proper channel, where the really industrious and prudent might be helped with profit to themselves and the country.]

Whether, although the prepossession about gold and silver have taken deep root, yet the example of our colonies in America doth not make it plain as day light, that they are not so necessary to the wealth of a nation, as the vulgar of all ranks imagine?

Whether it be not evident that we may maintain a much greater inward and outward commerce, and be five times richer than we are, nay, and our bills abroad be far greater credit, though we had not one ounce of gold in the whole island?

Whether wrong-headed maxims, customs, and fashions, are not sufficient to destroy any people which hath so few resources as the inhabitants of Ireland? [There were indeed but few developed resources in Ireland in 1785. Even now with a few of our resources developed, or in the act of being developed, wrong-headed maxims, foolish customs, and ruinous fashions find favour and encouragement in our midst.]

Whether it would not be a horrible thing

to see our matrons make dress and play their chief concern? [Many of them do little more at present to their own endless pain and the doctor's chronic profit.]

Whether our ladies might not as well endow monasteries as wear Flanders lace?

Whether England, which hath a free trade, whatever she remits for foreign luxury with one hand, doth not with the other receive much more from abroad. Whether nevertheless, this nation would not be a gainer if our women would content themselves with the same moderation in point of expense as the English ladies?

But whether it be not a notorious truth that our Irish ladies are on a foot as to dress with those of five times their fortune in England? [In the eighteenth century Irish ladies were more extravagant in their dress than English. At the present time it is a difficult matter to draw distinctions. One class of the community runs so closely upon the heels of another in aping appearances, that it would require almost a prophetic insight to tell some of the middle-class gentry from the upper ten; and, on the other hand, my children's maid among our shopocracy gentry will not be snuffed out by Madam Dough or Madam Suet the baker or butcher's wife. Mary Anne in the kitchen, she also entertains high notions; and if she cannot rig herself out in silks like her mistress, she will eclipse in flounces, frills, panniers, and what d'ye call 'em. High life below stairs will never go out of fashion in Ireland while vulgarity exists to such a great extent in our drawing-rooms.]

Whether it be not certain that the matrons of this forlorn country send out a greater proportion of its wealth for fine apparel than any other females on the surface of this terraqueous globe? [It must be acknowledged that even now a goodly proportion of the wealth of this country passes out for articles of fashion, not to say requisite wearing apparel.]

Whether the expense, great as it is, be the greatest evil, but whether this folly may not produce many other follies, an entire derangement of domestic life, absurd manners, neglect of duties, bad mothers, and general corruption in both sexes? [It produces at this day all these evils and a few more.]

Whether the first beginning of expedients do not always begin with prejudices? And whether even the prejudices of a people ought not to be respected? [When prejudices arise from honest conviction they ought to be respected, but when they are known to cover a factious opposition they ought to be trampled down.]

Whether a national bank be not the true philosopher's stone in a state?

Whether all regulations of coin should not be made with a view to encourage industry, and a circulation of commerce throughout the kingdom?

Whether to oil wheels of commerce be not the common benefits, and whether this be not done by avoiding fractions and multiplying small silver?

Whether, all things considered, a general raising the value of gold and silver be not so far from bringing greater quantities thereof into the kingdom, that it would produce a direct contrary effect, inasmuch as less in that case would serve, and therefore less be wanted? And whether men do not import a commodity in proportion to the demand or want of it?

Whether the lowering of our gold would not create a fever in the state? And whether a fever be not sometimes a cure, but whether it be not the last cure a man would choose? [It may be seen from many of the previous queries, Bishop Berkeley, as we have already mentioned, was in favour of establishing a national bank, and of founding a good system of banking in this country, which it lacked in his time, and still lacks. The trade of Ireland throughout the eighteenth century was crippled from the want of a banking system, and a proper coinage in gold and silver as a handy circulating medium at fairs and markets. The mind of the good

bishop was deeply impregnated with ideas on banking. Many of his queries, even at the present day, are entitled to the deep attention of financiers as well as the most ordinary of our thinking and working countrymen.]

(To be continued.)

SOCIETY OF BIBLICAL ARCHÆOLOGY.

At a meeting of this society—which, we may note, was established for the purpose of investigating the archæology, chronology, history, and geography of ancient and modern Assyria, Arabia, Egypt, Palestine, and other Biblical lands, and for the promotion of the study of the antiquities and the preservation of a continuous record of the discoveries relating to them—a paper was read by Captain Prideaux, Bombay Staff Corps, "On More Recent Discoveries in South West Arabia." The paper consisted of a carefully digested summary of the history and geography of the country of the Himyarites, from traditional Arabic literature, and the testimony of the coins and bronze inscriptions collected and translated by De Longpérier and Halévy. The first portion of the paper was devoted to an examination relating to the capital, and likewise to the descent of the Shebean kings, whose seat of empire, the writer maintained, was not, as was generally supposed, at Sana, but at a place described as Dhu Raidan. Captain Prideaux endeavoured to identify some of the chief monarchs mentioned on the Himyaritic tablets with those referred to in Dean Vincent's "Periplus of the Erythraean Sea," by the help of the numismatic discoveries of De Luynes and De Voqué. In the second portion of the essay the numerical system of the Himyarites was examined, and several inscriptions translated, and the paper concluded by a reference to the bronze tablets now in the British Museum, alleged to have been cleverly forged. A discussion followed, in which Mr. Drach, the chairman, and other gentlemen took part. Another paper, "On the Tomb of Joseph at Shechem," was read by Professor Donaldson. It contained a description of that interesting antiquity, derived from a very recent visit to the Holy Land. Professor Donaldson believed that the actual sepulchre was in a vault under the present Moslem structure, which is considerably out of repair, and is in no small degree injured by the subsequent erection of two Mahomedan tombs, which are also falling into decay. On the further side of the building are two memorial tablets, and a third in English, recording the burial of Joseph, is about to be affixed by the order of the late British Consul at Damascus.

Apropos, Mr. George Smith, of the British Museum, will shortly proceed to Assyria on an offer accepted by the trustees of that Institute, and sanctioned by the Lords of the Treasury. The proprietors of the *Daily Telegraph* have given the sum of £1,050 for the purpose of carrying on "Assyria Researches" in further elucidation of the cuneiform writings, an instalment of which was recently deciphered by Mr. Smith relating to the Chaldean account of the Deluge. The project bears the title of "The *Daily Telegraph* Expedition." We fear that six months (the period limited) will not be sufficient to effect the necessary researches and excavations. As to the cost, the proprietors of the *Daily Telegraph* are willing, in case the results are satisfactory, to bear any more additional expenditure needed. They stipulate to have the power of publishing accounts of Mr. Smith's proceedings and researches while engaged, but they will hand over to the Museum authorities any relics, tablets, or other remains that may be discovered, to be used for the benefit of the nation.

DRAWING PENCILS FOR ARCHITECTS AND ENGINEERS.

WE have been favoured by Mr. Surridge, of Great Brunswick-street, with samples of pencils for artistic purposes, which have been expressly manufactured for him by Messrs. Wolff and Sons, London. We have given them a trial, and found them perfectly satisfactory; several of our professional friends, also, who have had these pencils, inform us that they are the very best they have ever used. The Spanish graphite is a new kind of lead lately discovered, and is well suited for a drawing pencil for ordinary purposes. It is particularly firm in the point, and answers well all its degrees. The depth and softness of the lead used in these pencils, and its freedom from hardness or grit, are noticeable features in their favour. We can safely recommend a trial of them.

OUR COAL FIELDS.

THE first of a series of lectures on scientific and practical subjects was delivered in the Royal College of Science, on the 6th instant by Professor Hull, Director of the Geological Survey of Ireland. We append a summary of the opening lecture. The Professor began by describing the geological position and mode of formation of British and foreign carboniferous rocks. Regarding their age, the history of the human race might be taken as a unit of time in computation with their cycles of existence. Having gone down through the accumulations of the tertiary or caenozoic, and the secondary or mesozoic epochs, he came to the primary or palaeozoic, in which were the carboniferous rocks and strata. In these lay coal and a great portion of the iron, to the presence of which in the British Islands was owing their commercial position as great manufacturing countries amongst the nations of the world. The members of the carboniferous system were associated by certain common characters which justified their being so classed. The lecturer then showed the different physical conditions which affected the existence of carboniferous limestones in various portions of the world, and their order of succession—lower carboniferous grits and conglomerites, carboniferous limestone, millstone series, and the coal series. The latter or coal formation was that in which alone they could expect in the British Islands, a great part of Europe, and in America to find true coal. If these were better understood, and parties knew how to make use of the geological maps, which were now easily obtained, there would not be those absurd and ridiculous enterprises and speculations in coal of which the newspapers had been so full in recent times—enterprises which often resulted in useless expenditure of very considerable sums of money, which might be applied to more useful purposes. If it was more generally known, and people were educated to understand that coal could not be got except in a particular geological formation which was only to be found in certain districts, then there would be a decided stoppage to many of these futile undertakings. It was perfectly well known where coal existed in the British Islands, and it was well known where it did not exist, by properly educated men. Coal was of vegetable origin. If they took a piece of coal—certain portions of it—and selected it so thin as to be transparent, and mounted it upon a piece of glass, they would find with a microscope that it was one mass of vegetable tissue. Every bed of coal rested upon fire or other clay, and this clay was penetrated nearly horizontally from the bottom of the coal by stalk-like objects, pronounced to be the roots of trees which flourished during the coal period. When the coal was sufficiently excavated from the top or roof of the bed, there was exhibited a perfect mass of entangled vegetation. These all supported its vegetable origin. The elements of coal and wood were also alike, though of different proportions. Professor Hull then explained the formation of the coal strata, and the

relative lowering of the earth's crust. The *locale* of coal seams must once have been immense forests, compressed into, on an average, one-tenth their size during their transformation into coal. These forests were composed of an exceedingly small variety of plants, the genera of which were comparatively few.

INSTITUTION OF CIVIL ENGINEERS, IRELAND.

A MEETING of this institute was held in the Museum Building, Trinity College, on the evening of the 8th inst., Mr. Johnstone Stoney in the chair. The chairman addressed the meeting on "Permanent Ways," and was followed by Mr. Smith, of the Kingstown Railway.

Mr. Price, engineer of the Midland Great Western Railway, after alluding to the different varieties of rails, read a brief paper, an appendix to a former paper of his own, on the general question of "Rail Life." Mr. Price referred chiefly to the results of experiments made by himself in testing the value of rails, by subjecting them to a rolling power ultimately of the same nature as engine wear. The general rule arrived at by these experiments was that the standard "rail life" was the endurance of six million tons, and the standard life value of such a rail about £4 16s. a ton, each 5,000 tons which passed over the rail representing a wear cost of about 1d. The wear upon cast steel tires was really *nil*, the wear upon cast steel rails and upon iron rails, relatively, amounted to much the same thing as regarded the cost of both, the iron rails being in the end the cheaper of the two, taking, it is presumed, the standard in each case. Of nine samples of rails recently tested by Mr. Price, for the purpose of determining the money value, which, of course depended upon the life value, it was found that some fell as low as one million tons, some were two, some three, some four and a-half, and the highest only five million tons, the average "life" being but three million tons or so, and the average life worth only £2 14s. a ton.

Other gentlemen offered remarks upon the same subject.

SANITARY MATTERS.

WE trust that this year will be signalised with more energetic measures on the part of the Lord Mayor and the officials of the Corporation, than last year. The streets ought to get instant attention; and in respect to adulterators and vendors of diseased food and of drink, no mercy should be shewn to them. Those trading with light weights and measures should be severely punished, and all of the above delinquents, on a repetition of their offences, should be committed to prison without the option of a fine. The following cases were dealt with since the new year commenced:—

Robert Hudson, of Bath-street, Irishtown, who, on the 17th October last, was fined £12 for selling as milk a compound of water and milk, appeared now as principal witness in a prosecution by the Pembroke Township Commissioners against James Smith, 9 Tighe-street, dairyman, from whom he stated he had purchased some of the compound he had in his shop on the 17th of October. Mr. Ennis appeared for the prosecution, and Mr. J. O. Byrne, barrister for Smith. The case had been adjourned from a previous day in consequence of the illness of Hudson's wife, a material witness. She was now examined, and stated that her husband had been in the habit of purchasing "milk," from James Smith, of Tighe-street, for retail; that she was the principal person who purchased for her husband; that on the 17th of October Smith delivered to her half a gallon of "milk." The price of it was 5d. That was the day her husband was fined £12 for selling adulterated milk he had purchased from Smith. When her husband returned from the court that day he asked her if she had any of Smith's milk in the house. She had some, and she gave it to her husband in precisely the same state in which she got it from Smith. Mr. Byrne—You expected milk at two quarts for 5d. to be pure? Witness—I was only three months in the trade. Mr. Ennis—

You have given up the trade? Yes. Robert Hudson engineer, deposed that he took the milk from his wife, and put it in the same state in which he had got it, into a bottle, which he corked, and sealed, and labelled, "Smith's milk." He then locked it up and went back to his work, taking the key with him. In the evening, after his work, he brought the bottle of milk to Dr. Cameron, who referred him to the Pembroke Township Sanitary Inspector, to whom he took it. Mr. M'Evo, sanitary inspector, deposed that he brought it in the same state to Dr. Cameron, from whom he afterwards got this certificate:—I certify, that, on the 18th instant, Mr. M'Evo, sanitary inspector, Pembroke Township, handed to me this sample of milk, stated to have been bought from Mr. Smith, by Robert Hudson. I find that it consisted of milk, to which 100 per cent. or its own volume of water, had been added as an adulterant." The bottle of fluid was produced. Mr. Byrne, for the defence, contended—first, that Hudson ought to have proceeded by action at law, instead of constituting himself a private prosecutor; and secondly, that having chosen to proceed under the Adulteration of Food Act, he should have given notice to Smith, that he was going to Dr. Cameron, otherwise traders would have no protection against the inroads of private purchasers. His Worship—That is, dishonest traders. Mr. Byrne, in the third place, contended that this milk was not adulterated in fraud of the purchaser Hudson, who simply got the worth of his money, being 5d. for two quarts; who, dealing in milk, must be taken to have known the value of it. The magistrate inflicted a penalty upon the defendant Smith, amounting to £15, being £12 as fine, and £3 for costs.

In the northern division of the city several summonses were heard, but there were few convictions. Warnings were made to answer. The annexed cases will show the nature of the offences:—

Luke Reilly was summoned for disobedience of an order made on the 4th of December, that he should within 14 days provide sanitary arrangements for the accommodation of the tenants of the house, 73 Summer-hill. He did not appear, and a penalty of 20s. was inflicted.

Richard White was summoned for disobedience of an order made on the 27th of November, to repair the house 9 Gloucester-place, which was described by the sanitary inspectors as being in a very dilapidated and filthy condition, and without proper sanitary accommodation. The defendant admitted that the house was in the condition described, but stated that he was only the agent of the house. The owner was Miss M'Dermott, and it was set to a man name Woodcock, as a yearly tenant, whom he charged with being the cause of the nuisance. Woodcock had underlet it to another, and refused to surrender without being paid £10. Defendant would not be admitted into the house, and his life was threatened if he went in. After the magistrate's order had been made, the water-pipe and other things were taken away, and windows were broken, and Woodcock went to live in the neighbourhood. When the defendant did go in to look at the dilapidations, he had two men guarding him. He got a week's rent at that time. His Worship—As you can go in for your rent, I must make you go in to have the repairs executed. I will indict on you a penalty of 20s. and you can deduct it from the landlady. The defendant sat down, but rising a moment afterwards he said—Your Worship, I will have to call that decision a legal—I won't say the rest, for it would be a contempt of court. His Worship—I assure you, Mr. White, I should think nothing of sending you up to Richmond for a week. Defendant—You would do me evil for good. I must refer your Worship to the 108th Psalm. Your Worship left it in my power to bring an action against you before, by sending me for trial, and leaving me in custody of four men, but I did not do it, because I believe you were doing what you were conscientiously believed to be right. Defendant then left the court.

Robert Whateley was summoned for neglecting to put the house 25 Marlborough-street in sanitary repair. Mr. P. A. White, solicitor, said his client instructed him that the repairs were nearly completed. His Worship—There were no fewer than 27 orders made against Mr. Whateley in the Southern Court, and at last, after various returns of *nulla bona*, a warrant was issued, and then he struck his flag. I will allow seven days longer for the completion of the repairs. Fines will then be laid on if the work is not done.

Joseph Shaw, was allowed seven days for the removal of pigs from his house in Mecklenburgh-street.

A man named Kenny, was summoned for not having drainage accommodation for some cottages at Bunker's-hill, behind Rutland-street. He said he

had applied to the Corporation, who had undertaken to construct a sewer, and had it "in contemplation" to do so; but could not do so at once, as they had some prior engagements on their books. His Worship, considering that the sanitary inspector, as representing the Corporation, could not properly summon the defendant for not doing a work which other officers of the Corporation had undertaken to do, dismissed the case.

Patrick Hurley, was summoned for having pigs on his premises in Mecklenburgh-street. The defendant did not appear, and the sanitary inspector stated that he and his whole family were laid up in sickness. His Worship said it was no wonder. He would let the case stand over for a few days.

Patrick Brady, was summoned for keeping a large accumulation of manure in his yard, at Aldborough-place. He said he could not get rid of it at present, as there was no sale for it, but he would as soon as he could. His Worship—That won't do. I will give you seven days to clear it out, or else I will inflict penalties.

Are the Corporation yards clear of their manure heaps yet? A bad example creates several imitations.

Several wretched-looking persons living in Church-street were summoned at the instance of the Public Health Committee for permitting accumulations of manure on their premises, to the danger of the public health. Mr. Boyle, secretary to the committee, proved the offence. It appeared that the defendants made a trade of removing manure and cleaning out ashpits throughout the city. The refuse they accumulated in their own yards until it attained to such a quantity that it could be removed to the country. His Worship said there was no doubt this was injurious to the public health of the locality where the accumulation existed; but what were these accumulations? Their contents were taken from the yards and ashpits over the city, which must be taken somewhere, and no accommodation had been provided by the Corporation for its proper removal. Mr. Boyle said the Corporation objected to its being accumulated in crowded localities. The Corporation hoped soon to be able to utilise the tramway system for the purpose suggested by his Worship. His Worship said he had a case before him once in which a man was summoned by the Corporation for creating a nuisance a little beyond Newcomen-bridge, but it turned out, just in time, that the defendant was actually the agent of the Corporation, and that it was the Corporation carts that brought the manure to the place. Mr. Ennis, who appeared for the Corporation, admitted the point and force of his Worship's remarks, but submitted that because the Corporation had not provided the necessary measures for the removal of this stuff the defendants thereby had any excuse or lawful pretext for carrying on their obnoxious trade. His Worship asked was he to punish the defendants when he knew that the matter accumulated by them would be neglected and diffused all through the yards of Dublin. The evil, instead of being diffused, was now confined temporarily to this particular locality. The Corporation should do their part, and the magistrates would have no hesitation in doing theirs. How was this matter to be got into the country otherwise or better than by this abominable system. Let the Corporation bring their wealth, science, and genius to bear on the matter, and if a better method were devised, he would banish this trade from the city. Mr. Boyle said he hoped within the next fortnight to present a report that would practically obviate their present difficulty. The cases were adjourned for a fortnight.

IRISH GRANITES.

THE following appears in last Saturday's issue of our contemporary, the *Builder*. As it refers to a matter in which we as Irishmen are deeply interested, we need scarcely make any apology for quoting it in its entirety:—

"From the speech of Mr. Owen, the president of the Architects' Institute of Dublin, quoted by you, any person would be inclined to think that the Irish granite was an utter failure. Such statement, made by the president, is certainly not very patriotic, to say the least of it, and shows how little Irishmen are acquainted with the produce of their own beautiful country. I shall attempt to do that "justice to Ireland" which it would appear is not obtainable by "home rule," if such can be applied to the statement made in Dublin.

No country can produce a better granite, not only useful but ornamental, than Ireland; the beautiful Aberdeen granite cannot even compare with the splendid granite produced at the model

temperance town of Beasbrook. Here is a granite unsurpassed for quality and beauty; only see the monuments erected by Farmer & Brindley, of the Westminster Bridge-road. Again, see the works of Burke & Co., of Regent-street; also of M. W. Johnson, Sanders, & Co., and Maile, the monumental masons, of the Euston-road, and compare with the statement made in Dublin. I positively assert that a more useful, more durable, and at the same time ornamental granite than that of Beasbrook has not yet been found. I have had the pleasure of visiting this temperance town, and can most truly state it to be a model town. It really appears as one large happy family, and the secret of it all appears to be that the whole management is under the control of the Beasbrook Spinning Company, a company composed of gentlemen whose main object appears to be the welfare of the population. The granite quarries were opened by them, and are worked with the object of providing employment for the male population of the town, and, so far as quality of granite is concerned, they have it unsurpassed. At very great cost they have erected machinery to facilitate the working (but whether or not such will be found advantageous to a granite quarry remains to be seen); they have applied water-power for polishing the granite, and have produced some of the finest possible specimens of polished granite monuments, and likewise building materials, to the satisfaction of the most eminent London architects. Therefore, am I not justified in requesting you to allow such facts to be made public through your most useful paper, after the sweeping condemnation of Irish granite which has appeared? and more especially when I state that I do not write as a novice in such matters, having had an experience of over thirty-five years in granite.

AN ENGLISHMAN.

We (*Builder*) have received several other communications on the same subject, including a copy of a letter addressed to the president of the Institute of Architects of Ireland. The writer of the latter says, in the course of it,—"The Beasbrook granite combines beauty and durability in so high a degree that the astute Scotchmen themselves already recognise the fact, and apply to us for blocks to be wrought, polished, and sent forth into the market as Aberdeen granite. In some cases we supplied these blocks, but have now ceased to do so, knowing no reason why Scotland should win fresh laurels at the expense of Irish reputation." Mr. Owen has since written to say that his thoughts were fixed solely on Dublin, and that he did not wish his words to extend to a wider district."

HOME AND FOREIGN NOTES.

The tender of Messrs. Harvey and M'Laughlin, Belfast, has been accepted for the erection of the new courthouse, Lurgan, from the design of Messrs. Turner and Williamson. Cost about £4,000.

The church of the Female Orphan House, North Circular-road, has been re-opened, after extensive improvements and alterations, carried out under the superintendence of Mr. F. Sharpe.

THE ROYAL IRISH ACADEMY OF MUSIC.—Dublin, as well as London (says the *Globe*), is henceforth to have a "Royal" Academy of Music—that is to say, the existing society is to receive by her Majesty's sanction the title of honour. Music in Ireland, however, can scarcely complain of not being sufficiently recognised, even royally, supposing that the members of the academy are patriotic enough to consider themselves the modern representatives of the bards. There have been famous Irish colleges of music, long before England was a "musical nation," patronised by kings and queens. But probably the academy is ambitious of identifying its career with the harmonies of Beethoven and the elaborate airs of Rossini rather than with the Melodies of Carolean. Nevertheless whatever England may be, Ireland is not even now a "musical nation" in the modern sense of the term. Italy is of course supreme in the matter of musical temperament; and it is precisely Italy which has the very smallest appreciation for music in its highest forms. England, if candid Irishmen will forgive us for claiming one slight degree of superiority, has but little of the innate musical temperament, and yet it has produced many skilled and some great musicians. Ireland, a land saturated with the genius of song, has produced no name that stands above mediocrity since the days of the bards. We trust that the Royal Irish Academy, while to be loyal, will not forget to be national. It has the rare good fortune to represent with authority a country which has a music of its own. [On another occasion perhaps we will be able to show the *Globe* that Ireland has produced some skilled musicians and composers whose compositions stand not only far above mediocrity, but are unsurpassed in their particular fields.]

ROYAL DUBLIN SOCIETY.—The following is a statement of the rainfall at the Botanic Gardens, Glasnevin, for the year 1872:—

Month	Depth in Inches	Days of Rain	Month	Depth in Inches	Days of Rain
January ..	3.170	22	October ..	3.470	20
February ..	2.280	18	November ..	3.280	23
March ..	3.160	19	December ..	4.830	23
April ..	2.960	13			
May ..	3.470	20		88.300	229
June ..	3.580	22	Average of previous 10 yrs.	28.764	180
July ..	1.370	13			
August ..	4.760	15	Excess	10.436	49
September ..	2.840	21			

Day of greatest rainfall—22nd April, 1.600.

The greatest amount of rainfall in one month was not reached in 1872, for in October, 1863, the unprecedented amount of 6.010 is recorded to have fallen at the Botanic Gardens.

A NEW AND WONDERFUL INVENTION.—THE HYDRO-CARBON BURNER.—A few months since a spectator at a fire noticed that when a stream of water fell upon the flames they often burned more fiercely and brightly than before. This led to a course of thought and experiment, which has resulted in the perfecting of a simple apparatus by which heat is generated without the aid of wood or coal. The only material used, some combustible oil in connection with water. We had the gratification last night of seeing the invention in operation. Astonishment and delight are the only terms which suitably express our feelings as we saw the most incombustible element decomposed and made to emit bright flames and intense heat, without the annoyances of smoke, dust, or the least offensive odour. The invention can be applied to all the purposes of cooking, warming, and illumination. The size of the building to be warmed interposes no difficulty to its successful application, and in ordinary dwellings the process of cooking can be made to supply at the same time all the gas necessary for lighting. Mr. Griffin, the inventor, will take pleasure in giving a full explanation, and demonstrate its success. He has already made about 300,000 dollars by his happy discovery, which promises to save expense and the annoyances attendant upon the use of coal and wood, and to obviate the accidents so frequent in the use of kerosene and other illuminating fluids. This is an age of grand discoveries, and the hydro-carbon burner will rank with the greatest.—*Omaha Tribune*.

TENDERS.

For new corn store, Limerick, for Messrs. Bannatyne, merchants. Mr. William Sidney Cox, architect, Limerick; quantities supplied by Mr. E. P. Gribbin and Mr. W. Doolin (of Dublin) jointly:—

McDonald, Limerick ..	£8,191	0	0
James Cavanagh ..	7,712	0	0
Ryan and Sons ..	7,666	0	0
William Carroll, Ennis ..	8,900	0	0
Robert Walker, Cork ..	8,860	0	0
Richard Evans ..	6,791	12	0
Collen, Brothers, Dublin ..	8,462	14	11
Charles W. Atkins, Cork ..	6,356	0	0
McCarthy and Guerin, Limerick ..	6,295	0	0

TO CORRESPONDENTS.

GRANITE.—We believe that Mr. Owen is mistaken in his views respecting County Dublin granite. Like all beds, there are good and bad specimens; and, if the soft material is more frequently used, the causes must be looked for in that higgling and cheapening system in vogue with some of our builders and needy quarrymen. Hard and durable granite costs, of course, a good deal more to work than the softer material, which unfortunately is too often used in the Dublin market; but there are beds of granite in the County Dublin as excellent as can be desired.

THE UTILIZATION OF THE TRAMWAYS.—The utilization of the tramways for the purpose of scavenging was first suggested by a writer in this journal both here and across the channel, and several corporations and local boards in the United Kingdom are at present making arrangements for carrying it into operation.

THE STREETS.—We are waiting to see what our local rulers will do. A few weeks more will show whether the intention exists to make an earnest beginning.

PUBLIC GARDENS.—A correspondent is referred to back Nos. of the *IRISH BUILDER* on the subject, including the articles "Notes on Early Gardening in Ireland." We may return to another aspect of the case on an early occasion.

STUDENT.—See *Jukes' Manual of Geology*, recent edition.

OLD BRICKWORK.—In the Liberties and other quarters on the south side of the city several fine old specimens of brickwork may be found. Some of the best houses are built with narrow red bricks, smooth-faced and close-jointed. In several of the Irish provincial towns and cities we find a similar class of houses built with small red bricks, and so closely bedded that a carpenter would be inclined to say that they were glue joints instead of mortar joints.

GANDON, THE ARCHITECT.—This celebrated Dublin practising, though English born, architect wrote no work upon the literature of his profession that we are aware of. He, however, contributed some papers on the architecture of this country in the past to one of our institutes of his day, but it partook more of an archaeological than an architectural character.

RECEIVED.—J. B.—A Coachmaker—Northern Athens—Urbs Intacta—Carpenters' Asylum—The Trade Guilds of Dublin—R.H.A., &c.

"A VISIT TO EPPE'S COCOA MANUFACTORY.—Through the kindness of Messrs. Eppe, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Eppe, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*."—See article in *Land and Water*, October 14.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPE & CO., Homoeopathic Chemists, London." Also, makers of Eppe's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Eppe and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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TESTIMONIALS.

From WILLIAM TITE, Esq., M.P. for Bath, and Architect of the Royal Exchange, London.

House of Commons, 2nd March, 1864.

DEAR SIR.—In reply to your note, I beg to say that I have used both the sorts of Cement manufactured by your firm, and that of Messrs. Francis and Son; I mean the Cement usually called Roman Cement, or the more recent introduction of Portland Cement. I believe these Cements, manufactured by either of your firms, to be equally good. I know no difference, chemically or practically, between them; and I should use, and authorize to be used indifferently, either one or the other. You are at liberty to use this note, if you think it necessary.—I am, Dear Sir, your obedient servant,
Messrs. White & Son. (Signed) WILLIAM TITE.
From R.O. MINNIE, Esq., Surveyor to Board of Ordnance, London.
War Office, Pall Mall, London, S.W.,
3rd March, 1864.

GENTLEMEN.—In reply to your request, I have much pleasure in stating my favourable opinion of the quality of your Portland and other Cements, which have been extensively used in the Public Works connected with the War Department at home and abroad, especially in several of the fortifications now being erected in this country. On all occasions within my knowledge the quality has been equal to that of any other manufacturer, and has given great satisfaction.—I am, gentlemen, your obedient servant,
(Signed) R. O. MINNIE, Surveyor.

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Art Worker in Iron,
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AND GATE MAKER,
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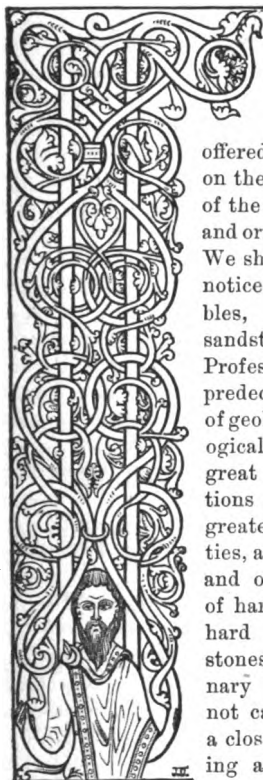
The Irish Builder.

VOL. XIV.—No. 315.

*The Building and Ornamental Stones of Ireland.**

THIRD NOTICE.

MARBLES, LIMESTONES, AND SANDSTONES.



N our second notice we spoke at some length on the granites of this country, and offered some observations on the nature and quality of the supply for building and ornamental purposes. We shall now pass under notice some of our marbles, limestones, and sandstones mentioned by Professor Hull and his predecessors in the field of geological and mineralogical science. All our great limestone formations contain marbles in greater and lesser quantities, and of various colors and of different degrees of hardness. Some very hard non-transparent stones—harder than ordinary limestone, though not calcareous, and with a closer grain, and bearing a polish—are often termed marbles. Marbles,

though limestones, are far closer in grain, and they also, like limestones, present either a granular or lamellar texture. The true marbles, according to Professor Hull, are crystalline limestones capable of receiving a polish, and he treats of the most remarkable varieties in Great Britain and on the Continent. We must content ourselves at present in dealing with the Irish varieties.

The black variety, which has been long famous, is the product of quarries in Kilkenny and Galway. The former takes a very fine polish, and, when first cut, is quite black. It is more fitted for internal than external use, and does not retain its colour when exposed to a humid climate like ours. Black marble owes its colour to an admixture of iron, some specimens containing upwards of five per cent. It will burn white, as a lime, but will turn to an ochre or reddish yellow colour afterwards. It will be found that, where black marble has been used for headstones or monuments which are exposed, after the lapse of some years the blackness disappears, and, in the words of Professor Hull, "white marks of fossil forms present themselves upon its surface." The Galway quarries—of which a detailed account has been given by Mr. Kinahan, in his *Memoir accompanying the Geological Survey Maps*—are situated along the shores of Lough Corrib at Angliham and Menlough. An export trade for many years has been carried on from here, and very large blocks have been quarried.

Blocks from 14 ft. to 16 ft. in length and 5 ft. in breadth, and averaging 12 in. in thickness, have been raised here and sent to London. In the south of Ireland black marble is found at Churchtown and Doneraile, Co. Cork; at Carlow; and white and black varieties occur near Tralee, Co. Kerry, and in the islands of Kenmare River.

The grey variety is also plentiful in this country, and is to be found at Ballykilboy, near Waterford; at Tullamore and Clonmacnoise, at Drominee, Tipperary, Carrigaline, and Castlemaine. A dove-colour variety occurs in King's County in connection with the grey beds, and the grey class is often what is called encrinatal. A handsome dark grey description variegated with corallines is to be obtained at Moate, Co. Westmeath. Grey marble contains iron, but of lesser quantity than the black—perhaps about two per cent. Of late years Aberdeen granite, from the quarries at Peterhead in that county, has been held in much repute, and has been exported largely to England, and principally to London, for pedestals for statues, chimney-pieces, pilasters, panels, and slender columns or shafts for building purposes. The "canny" Scotch have, however, discovered that Ireland contains an article of a better quality in some particulars, and Irish red marbles and granites have been imported, and the latter has been supplied for London use as pure Peterhead.

Our beds of red and variegated marbles are scattered in various spots over the kingdom, but the principal are at Armagh, Middleton, Churchtown, and the Little Island quarries, Co. Cork. The former variety is thus described by Professor Hull:—"The Armagh stone presents when polished varying tints of light red, passing into purple, yellowish brown, and dove colour;" and those of Middleton and Churchtown are of "a rich brownish red variegated with white or light-coloured strings, specks, and patches." It will be seen at once how valuable for ornamental purposes are the above varieties, either for chimney-pieces, pilasters, or paneling. At Ballymahon, Co. Longford, a brownish variety mottled with various shades is to be obtained; and at Pallaskenny, in the Co. Limerick, there is a dark red and mottled marble, which has also been mentioned by Gwilt in his *Encyclopedia of Architecture*. This last variety has for some years been extensively used across the Channel. A cream-colour marble is also found at Armagh and near Dungannon. In fact, Irish variegated marbles are plentiful, and are to be had at Killarney, the islands in Kenmare River, near Dunkerron, and at other places. Some of these varieties are striped white and red, and others are of various colours.

In the King's County we have what is termed "Sienna" marble, but the best kind of this description we believe occurs near Shannon Harbour, on the Galway side. It takes a very high polish. Professor Hull is of opinion that none of these so-called Sienna marbles are equal in richness to the Italian variety from which they take their name. Be this as it may, their beauty is unquestionable. The bands of limestone in proximity to the granite in Donegal are converted into crystalline marble, and our author thinks it is yet uncertain whether any of this white marble is sufficiently homogeneous and pure for statuary purposes. Promising specimens, which offer well for statuary work, have been obtained from Ardes. If statuary marble

can be obtained in Ireland or in other portions of the British Islands, we do not see why Carrara should be resorted to. Long usage or fashion affords no valid reason for the preference. A bust or statue of a public man executed in Irish marble would be quite as valuable as Italian; and the sculptor, whoever he may be, will merit the thanks of the British public who sets the first example by boldly going in for the home article, and producing a work of art racy of the soil in thought and material.

In regard to limestone—which may be accounted one of the most useful and generally-used of our building stones—Ireland possesses it in abundance, of various degrees of hardness. The carboniferous limestone occupies the greater portion of the centre of this island, and is divided into three kinds—the lower, the middle, and the upper. The middle is what is known here as calp, or the ordinary building stone, of which Dublin possesses some good quarries; but calp is very variable in its quality. The upper and lower beds of our limestone is a greyish kind, sometimes dolomitic and even oolitic, but not in a general way like the English building descriptions. The calp or middle limestone is a dark-coloured stone, and has been for a long period used extensively. If not well selected, it is liable to rapid decay, on account of its flaky nature. Hewn and built upon the same bed as it occupied in the quarry, it will be found to answer well. The inferior kind of calp will do for common walling purposes; and, if properly hewn and bedded, its tendency to flake will be counteracted. The upper and lower beds of our limestone are flaggy; the former is more even bedded. The divisions here mentioned of our limestones, according to Professor Jukes, are not capable of being recognized over the whole of the country.

The oolitic variety of our limestone occurs along the shores of Killala Bay, and the beautiful but ruined Abbey of Moyne has been pointed to as an instance of its durability; the sculptures, though executed several centuries ago, still preserve their sharpness of outline. Mr. G. Wilkinson gives, in his work already alluded to, an account of the several structures of importance in this country which have been built with native limestone, among which may be mentioned the Round Towers of Swords and Clondalkin, in the Co. Dublin; Cashel, Donoughmore, Kilrea, Clones, Fertagh, and the Seven Churches. In relation to the fine examples of Norman mouldings and other ornaments to be found on the doorways or windows of these structures, Mr. Wilkinson believes them to belong to a period anterior to the introduction of that style into England. Professor Hull is of opinion that Mr. Wilkinson's views on the subject solve a problem which has often been, and is still, a source of difficulty to several of our archaeologists.

For some years past limestone of bluish tint has been used in Dublin and vicinity in ecclesiastical edifices. Some dislike its appearance; but we think when it is relieved with dressings of the oolitic or Portland variety, and combined with granite, it presents a handsome appearance. Our limestone is harder to work than the English, and, though requiring careful chiselling, it can compare in durability with any class of limestone in Great Britain. It is a consideration certainly with builders to save expense, and the choice is determined mostly on that account

* "A Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries." By Edward Hull, M.A., F.R.S. London: Macmillan and Co.

alone. Portland or Bath stone is far easier worked, and the stonemason can manipulate a moulding or foliage with far greater facility in Caen or Portland stone than he could on a block of the carboniferous limestone of this island. The old Abbey of Moyne and several of our old abbeys and round towers afford, however, convincing proof, even in their ruin to-day, of the durability of Irish limestone of different varieties.

The ordinary limestone of this country weighs in the average per cubic foot 170 lbs., the extremes of weight being put down at 159 lbs. and 180 lbs., the average weight of water absorbed by immersion being one-fourth of a pound, and the greatest one-half of a pound. In contrast with this, the chalk of the Co. Antrim weighs 160 lbs. per cubic foot, but absorbs three pounds of water. The bad shaly calp weighs 160 lbs., and absorbs from one to four pounds of water. As we said already, we need a new series of experiments before we can form a clear estimate of the value of our building stones in general.

The chalk formation of Ireland is not very extensive, but, as a limestone, it deserves to be noted for its value. It occupies the "basaltic plateau" of the Co. Antrim, and it is similar in form and structure to the English description. It contains large masses of flint, but it is not used as a building stone in this country; and in the locality where it exists it is mostly quarried for lime, though the lime it affords is not nearly as good as that obtained from the ordinary limestone. Limestone is an article of importance to many besides builders, and it is used in a variety of ways and in connection with many forms of manufacture. It is of value to soap-boilers, tanners, and skimmers. It is, as a lime, a good disinfectant, and in agricultural operations is of value as a manure, and even in medicine it has its uses.

The sandstones of Ireland are another important group of building stones, and they have been long used in this country in connection with our early ecclesiastical buildings. Certainly the early mason builders of Ireland, in choosing sandstones, were not actuated in lightening their labour. In many localities where it has been used, a softer limestone might be had; but where they had to use it from necessity, they have used it with credit to themselves and the country. The suitable building sandstones of Ireland are the old red sandstone, the carboniferous, and the trias or new red sandstone. This building stone is distributed chiefly in the north and south of the island. The counties of Cork and Kerry furnish green, purple, red, greyish grits, flagstones, and conglomerates, all belonging to the old red sandstone system. The upper bed produces fine-grained flags and tiles. Mr. Wilkinson gives a list of some of the best kinds, which is quoted by Professor Hull. In Mallow there is a hard sandstone, brown colour, yielding flagstones, steps, window-sills, &c. In Kanturk and Macroom there are hard brown liver-coloured kinds, expensive to work, but very durable. In Youghal there is a reddish grey description, which will bear dressing. At Ardmore, on the borders of Waterford, there is found a red sandstone which turns grey on exposure, but it is very lasting. At Skibbereen and Sherkin Island, Baltimore, there is a grey soft sandstone, which hardens after being a while exposed; and at Glandore there is a greenish

variety or hard grit, which has been extensively used throughout the country.

Belonging to the lower carboniferous rocks lying under the limestone we have the yellowish grits and conglomerates, or greyish and yellowish flagstones. The former predominate in the Co. Longford, and the latter in the Co. Mayo. A series of flaggy sandstones occupy a higher geological position, and are extensively distributed through the counties of Kilkenny, Carlow, Queen's Co., Tipperary, Limerick, and Clare. These are situated under the coal measures, but north-west, in Leitrim, and again in Fermanagh, there are to be found massive grits and conglomerates occupying a similar geological position, and, in the opinion of Professor Hull, are in all probability referable to the millstone grit formation of England. Good yellowish and reddish sandstones are distributed through portions of Tyrone and Londonderry. A white fine-grained freestone of the lower carboniferous series is to be found near Cookstown, and is of late years in much repute in Belfast and vicinity. Along the Belfast coast, at Ballycastle, large blocks of reddish, yellow, and white freestone could be quarried and shipped to any part in the three kingdoms. Carlow flags are well known, and are extensively used in this city and in several provincial towns. They are either dark blue or grey, and are sometimes micaceous. Millstones and grindstones in the last and early in the present century were raised in various parts of the island, but somehow or other the foreign article has met with favour, not from its better quality, but from the want of enterprise. Millstone grit exists on the borders of Leitrim and Fermanagh, and again at Kilkenny.

Of the new red sandstone there is also a fair quantity in the Province of Ulster, stretching along the southern and western borders of the Co. Antrim and on both shores of Belfast Lough. The inferior kind is a soft, red, marly sandstone not suitable for building, but useful for foundry or casting purposes. At or near Holywood and Newtownards there is a good description of this red sandstone, which hardens after it has been worked and exposed. We have not yet sufficient evidence of its durability.

The Lower Keuper sandstone exists at Scrabo Hill, and is said to be a remnant of a once more widely extended formation. These sandstones belong to the upper division of the trias. Messrs. Ritchie and Jackson, the owners of the Scrabo quarries, raise large quantities of this sandstone for building purposes, and specimens may be seen at Messrs. Sibthorpe's marble yards in this city. The Scrabo sandstone is an easily-worked stone, and it varies in colour from white to grey, yellow, and reddish brown. It is suitable for ornamental purposes. Its general uses are for door and window sills, door-blocks, quoins, and various dressings. These quarries also produce flagstones of good quality. These north of Ireland sandstones are, in the opinion of Professor Hull, well fitted for architectural and ornamental purposes, and we can ourselves bear evidence to the fact. We have seen some of this sandstone used even for statuary purposes, and with very good effect. There are positions where it could be used with advantage for large figures. Mr. Wilkinson says the crushing weight of this stone varies from 2,240 lbs. up to 10,570 lbs. to the cubic inch, the average being about 4,000 lbs.

We have again exceeded our limits, and will have to defer some concluding observations until our next issue on some of the particular characteristics of the building and ornamental stones of Ireland, and other indigenous building materials.

PRIZES FOR PLASTERERS—ART AND HANDICRAFT.

THE London city company or guild of Plasterers—one of the minor corporations, of which nearly a hundred still exist in the English capital—have offered a series of prizes, to be competed for by students in metropolitan and provincial schools of art in connection with the Science and Art Department. These competitions are open to the students of the Dublin Society School of Art and other of our schools in connection with South Kensington. We hope our young artisans of the plastering trade will be stimulated to make a noble effort to obtain some of these prizes, not for their money value, but for the credit of their craft, which in this city at one time performed some artistic and most creditable plaster and stucco work.

The design for the first prize is to consist of "A Model in Plaster" for a spandril moulded in bold relief, the filling to consist of an arabesque combination, introducing the figure in fruit, foliage, and flowers, or other ornamental motives. The spandril to fill the space between two adjacent arches, and to be enclosed in mouldings. The curves of the arches to be at the choice of the designer—any style may be chosen, and the size of the model not to exceed 30 in. by 24 in. For the best design for the above a prize of £7 7s. will be awarded, and for the second best, £4. There is no severe restriction in this, and there is ample liberty given to the student or young workman to please his fancy. The second-class prize is to be given for "A Design in Monochrome." This is to be an original design also, to be drawn in pencil or monochrome, and capable of being executed in plaster in low relief for the decoration of a chimney-breast from floor to ceiling, including a chimney-piece, the decorative space above, and cornice. The drawing to be 24 in. high; the scale to be stated. For the best design in this class a prize of £8 8s. will be given, and for the second best the sum of £5 5s.

There are in this city many old mansions of our former nobility, which, if hunted up and visited, would afford hints to the students or intending competitors. Some good stucco and plaster work can be seen in the Round Room of the Rotundo, and the plaster ornamentation in the Royal Exchange (now the City Hall) is respectable. Some years ago we met with excellent and artistic stucco and plaster work in connection with chimney-pieces and chimney-breasts in a few of our old city mansions, executed during the last century by native and Italian artists.

In relation to the above prizes, it may be mentioned that the first and second prizes in each case cannot both be taken by students of the National Art Training School at South Kensington. All works sent in competition must be specially prepared, and "marked as being in competition for the prizes of the Plasterers' Company of London," and no student is to send in more than one design for each subject. The models and designs will remain the property of the competitors, but the Plasterers' Company will reserve to

themselves the right of taking copies of them should it be thought desirable. Respecting this right, we would observe, in the interest of the successful competitors, that if any of their designs should be used in any public building, they ought to be allowed to obtain an additional reward for its being used. All designs must be sent into the Science and Art Department in April of this year, with the works required by the regulations in the "Arts Directory."

We have embodied in the above account all the information issued in respect to the prizes, and it now remains for our art and artisan students to see what they can do in successfully competing with their brethren across the Channel.

We are glad to note that two or three of the city guilds of London are at last making a move in the interests of technical education. It were to be wished that they had thus moved a half, or even a quarter of a century ago. The rest of the companies should follow the good suit at once, or they may find that some Cabinet Minister will wake them up from their repose some morning with an Act of Confiscation diverting their income and resources into a direction more compatible with the spirit of the age. If the city companies of London act with becoming judgment, notwithstanding their present exclusiveness and antiquity, they will still have a grand future before them. For the honour of art and handicraft, we hope they will be found equal to the occasion.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

SHAMROCK-STREET.

PERHAPS it is fully thirty years since this street became, to our personal recollection, a well-known one, from affording us a short cut from Hoggin-green to the southern suburbs; but how mighty are the changes since then. The street itself and the buildings in its vicinity have an altered appearance, and the genial old traders and worthy citizens whose names we delighted to read on their show-boards, and into whose shop windows we gazed with such delight, we are not certain that one of them still remains. Printers, engravers, tribunes, journalists, poets, peripatetic orators and philosophers—all are gone, and their haunts know them no more. New faces are here, and the busy throng passes to and fro as indifferent to the past as if no past had existed. Pyke-corner is no longer in our street nomenclature, and the Royal Arcade is buried like a second *Herculeum* after its burning. An archaeological investigation in this quarter might lead to the excavation of some Queen Anne farthings and the remains of pinchbeck jewellery and sawdust-bodied dolls, but the Ogygian Academy of Antiquities can spare no brass for unearthing such undiscovered treasure-trove. The memory of "Omes" is almost faded from the public mind since the advent of the White Quakers and their Chapelized Gardens of Eden. No ghosts are encountered now by our incredulous citizens, save the ghosts of bad debts, and these, like angels' visits, are even few and far between. We walk on and pause and look, and we are started from our reveries by a gentle tap on the shoulder by the "Oldest Inhabitant."

"Ah me," quoth our cicerone, "I little thought upwards of forty years since I would have lived to see so many changes, but in some respects in this vicinity there have been some few changes and improvements for the better. Old buildings have been pulled down and new ones raised, but the class of traders who have supplanted the old ones of my early days are

as different as chalk is to cheese. Why should I mourn, as my race is nearly run? but still I love the old city haunts of my youth, and one like me, after all, may be excused for regretting the disappearance of old familiar sights and faces. Were you ever in the old Oval Church that stood yonder? The splendid old chandelier that adorned the House of Lords was to be seen within it, and some fine old pewing that Frank Johnston was said to have designed. Some curious tablets and epitaphs were to be found upon the walls and on the old tombstones in the churchyard, but not a few of these were, through neglect, allowed to be defaced and destroyed. Well I remember the year that poor Edward Smyth was engaged on the work of Irish art that stood of erst over the entrance to the old church. Poor martyred Smyth, whose talents were unrecognised and unrequited by his own countrymen, and who never might have emerged from the stonemason's bench had he not found an appreciative patron in the person of a noble English architect, who beautified this city and who lies unmonumented in his cold Irish grave in a village churchyard. The figure of the martyrdom of the patron saint of the church was sculptured by the artist struggling with illness and poverty, and the payment he received for his time was far below what an ordinary mechanic would receive for the time expended. That miserly payment which poor Smyth received will stand for aye as an accusing record of the hateful and parsimonious shabbiness of the murderous patrons of native art!

"Let us walk a few steps down. This house, sir, is the historic No. 112 of modern days, and, together with those two other houses adjoining, are remarkable in the annals of Shamrock-street. In the year of the Reign of Terror I often walked down this street, particularly on Fridays and Saturdays, and I always found something to amuse me. Knots of men and boys and hosts of flying stationers were on the pavement, and 'law and order' were well represented, both in livery and in coloured clothes. 'Rory of the Hills' was in town, and walked the flags side by side with 'Rody the Rover.' College and medical students, on mischief bent, were to be seen prowling about either end of the street, and foreign emissaries—if one were to judge by the cut of their coats and beards—were not sparse. No. 112 was a regular conservatory of hot-house plants from which blazing broadsheets and flaming flysheets were issued in quick succession. Men walked the street with bloodshot eyes and their hair standing on end tipped with fire. Columbian and other presses worked night and day with a 'vigour and a vengeance' sufficient to start Gutenberg from his grave. Third, fourth, fifth, and sixth editions came out in large type, headed 'stop press,' with the announcement underneath from the seat of war of 'No later news.' The people cursed morning, noon, and night up and down the thoroughfare. Printers and compositors emerged from their machine-rooms and 'chapels' in the small hours of the morning, coughing with a force in the damp night air sufficient to burst their bronchial tubes; and the hosts of young 'printer's devils' flung pie at each other when not allowed sufficient time to shake their weary bones. There never was such a time, sir, before or since as the year of the Reign of Terror in Shamrock-street. Just about on this very spot I remember standing upon one occasion in that memorable year when a raid was made by the guardians of the peace upon a body of flying stationers, the majority of whom were women. I may remark that these women who dealt in broadsheets in these days were a characteristic class; they could swallow 'croppers' of the craythur as fast as they could wink, and when they could afford to pay for a larger quantity they generally had it in a battered naggin. Woe betide the barman who dare say white was the black of their eye, or refuse to oblige them by drawing the mountain dew out of the barrel with the magic number. On the occasion of the raid that I

mentioned just now, sir, the women defended their privileges like Amazons, and the guardians of the peace did not make their seizures or arrests without considerable trouble. Many of the 'Blues' got black eyes and appeared before the magistrates at Bank-street to prefer their charges, minus their whiskers or one side of their faces. The magistrates sometimes let the women off with a caution or a small fine, but these heroines of the liberty of an over free press come straight back to Shamrock-street as contumacious as ever. A singular sight might often be witnessed in this street of a number of women crying out the obnoxious papers, although not one copy could be seen in their hands, but if a well-known customer required one, a copy would be found forthcoming from under the linsey-woolsey or from out of the bosom. I witnessed an assistant editor on one occasion outside the door of 112 with a bundle of his own papers under his arm offering them for sale. The women on that morning were all arrested and their copies seized; and later in the day, after a determined resistance, the editor was arrested and brought before the magistrate, but he was immediately let out on bail. The last remarkable sight I witnessed during the Reign of Terror in Shamrock-street was the seizure of the whole plant and type of the *Anti-Union*, immediately after the conviction of its proprietor and editor. Two drays were drawn up outside the door of the office, surrounded by a posse of constables; the cases of type were carried out with other fittings, and the whole were carted to the government stores. I need not dwell any longer on these memories, which, though of modern times, are as much belonging to Unknown Dublin as more older ones.

"What do I think of the modern improvements in this quarter? Well, sir, some of them are very commendable, others are only so-so. The architects of one or two of the large buildings below there seem to have striven after effect more in material than in design, but neither seems to harmonise. That building there within sight of where we stand is really Scotch in conception, as I believe it was in execution. The freestone that composes its front is from a Scotch quarry I understand, and it puzzles me in my old age to think how men seem never to recognise the folly of sending coals to Newcastle, and the most odd thing about it in respect to this country that we are led to believe the system pays. It possibly may pay the architect, but I am certain it does not pay the client; and, on the whole, it is paying the country a very poor compliment. It is only a few years since that large building was raised, and yet look at the colour of that stone and the appearance of the mouldings. The lime in its composition seems to be undergoing a rapid state of spontaneous combustion or burning. The nose on the face of that corbel is frost-bitten, and the sparrows have picked the eyes out clean. Our birds, sir, like portions of our people, appear to be 'Home Rulers' and bent on mischief, and they are not particular as to where they build their nests. They never ask the permission of architect or owner, and they have a higher opinion of their own constructional ability than their enemies on the pavement below. Even the swallows, sir, make a better mortar and cement than our modern builders. Let them only choose a position, and they will construct a stable home on the most perilous angle, and their structures will last as long as the foundations they build upon.

"I like stone buildings very well, sir,—a good sandstone or granite,—and I would like to see our city built up anew with the latter. A good brick building is, however, unobjectionable, and there is something homely and warm about it. Look, right opposite there are some houses of old Dublin brick, which were well laid, and required none of your modern 'wiggling down'; but there are some finer specimens a few streets off, which I may tell you some particulars of on another occasion. About eighty years ago, when I was a comparatively young man, our Dublin bricklayers were a fine body of

workmen. They used the best of mortar, made close joints, and, though they worked rather slowly, they worked solidly, satisfactorily, and well. There was then no work hurriedly 'run up' by relays of men by gas-light, — buildings were suspended during heavy frosts and wet weather, and no cases were known of houses toppling over before they were finished, nor afterwards. Our builders valued their characters; the men loved their work and put a spirit into it, and the results are that many of these old brick mansions are as strong to-day as they ever were. I laugh sometimes when I hear men talk of the 'Five Orders,' which they never follow in any particular. These are the days of 'Styles,' and, bless my old heart, what a number of monkey styles are there not in vogue in our city and suburbs.

"We have of late years what is called 'shop-front architecture,' and what a higgledy-piggledy hotch-potch style it is, to be sure—something like that yonder, but on a more ambitious scale, or rather no scale, for our modern architects prefer not working to any scale, as it dwarfs their intellects and hinders that freedom of design which should be shown in connection with wooden entablatures, plaster cornices, terra-cotta consoles, and picture and mirror-framed pilasters. Shop-front architecture, sir, is a wonderful invention, and it admits of any sort of treatment. In connection with it, you may carry design to the highest pitch of the roof. You can plant louver lights over your chimney-shafts, round towers on the angles of your parapets, put a mezzanine storey between your shop ceiling and your drawing-room floor, and carry your plate-glass front up on the outside to enclose the whole three storeys in one. What a pliant and elastic style, to be sure, is not this shop-front style—the glory of carpenters, glaziers, and house-painters, but the secret cancer of modern architecture.

"I fear I delayed you, sir, with my recollections and opinions; and as you have to make a call at the University at four, I will bid you good bye for this evening."

Making an appointment for the following day, and hurriedly shaking hands, we parted with the "Oldest Inhabitant."

MEMORIALS OF A PAST AGE.*

Now within this fair city of ours, but when Oxmantown (then called Ostmantown) was a Danish village and lay some distance outside the walls, William Marshal, Earl of Pembroke, in the year 1202 founded near it the Priory of St. Saviour, occupied afterwards for ages by the monks of that order—then by far the most learned and one of the wealthiest communities of their time. Here a numerous body of these secluded men passed their days in study and the austere penitences then practised, shut out from communion with their fellows in the dreary solitude of their cells, save when the calls of suffering humanity drew them forth to mingle with each other and the world in ministering to its wants, for here the outcast poor, the wanderer, and the wayfarer were never known to apply for aid in vain.

Bounded upon one side by the River Liffey where the Four Courts now stand, by the present line of North King-street on the other. Approaching where Capel-street now is and nearly abutting upon the older foundation of the Benedictine monks of St. Mary's Abbey on the east, and by Church-street on the west, lay the grounds upon which the Dominican Priory existed. Green fields and cultivated lands were then within this boundary, here and there dotted by massive buildings devoted to religion and charity, a richly-endowed church with delicately-traceried windows and costly shrines, cloisters, and cells innumerable, together with all the appliances for the retainers of a wealthy religious community

occupied the main site, or that nearest the river and directly facing the city; while in compliance with the then obsolete statutes of Brehon law, refuges for the traveller, with store-houses, granaries, and mills for grinding corn, all gratuitously for the poor, are known to have existed.

Uncared for and unnoticed, some valuable relics of these buildings still remain, but hidden away in dark nooks and out-of-the-way corners amid dingy masses of brick and mortar now grown melancholy-looking from age, in narrow streets and tortuous lanes where the sun seldom gets leave to shine, being blocked out by crowded rickety old buildings with quaint gables and rudely-carved key-stones over the arches of their window openings, which now occupy a considerable portion of the former site of the Priory; so old are they in comparison with modern Dublin that it is scarcely to be believed they were once fashionable quarters—at least they were in former times inhabited by wealthy merchants and the professional and well-to-do classes, but this long since has ceased; for a while they tried on the impress of faded gentility, and strove hard to keep up appearances, but it was of no use to try it longer, and they are now crumbling in their old age and let in tenements to small dealers and families who derive their incomes from labour. The dilapidated walls of a prison—the scene of the exit from this world of many a hardened criminal, perhaps of many unjustly condemned—stand adjacent to the north-eastern line of our boundary; near it is a fruit and poultry market, flesh and fish shambles, and stalls devoted to the purchase and selling of old iron occupy portions of the southern; centrally, squalid poverty stalks abroad or hides itself in its most pitiable state in retiring misery from incurious gaze as seems most fitting to the hardened mendicant, or from choice of the lowly virtuous poor, while vice in its most revolting and demoralising forms courts attraction here unblushingly, the garish whiskey palace brilliant with gas and redolent with tobacco smoke, tricked out in all the wanton finery of polished glass, of mirrors, and of marble counters, gilt ceilings, and priceless decorated walls (showing what the poor artisan and the poorer still those dregged in vice can purchase—theirs no longer), surround it, but never approach its centre—it is too much out of ordinary thoroughfare for that. True it has several wealthy trading establishments, a factory—call it so if you will,—three or four religious edifices, and, above all, the magnificent pile, commenced by Cooley but completed by Gandon, is reared upon this site. But the Dominican Priory ages ago has long since ceased to be: its extensive buildings and its properties were confiscated to the Crown upon the suppression of the monasteries and granted to the King's Inns, in the possession of which they have remained to the present day. The building of the Four Courts and the removal of the courts of law from Christ Church, with the consequent improvements gradually required, has therefore obliterated all traces of the Dominican Priory and its massive structures (some of them gems of architectural art), save such remains as still exist in underground buildings, several of which are well known in the locality stretching from North King-street towards the river. One of them—and perhaps the most interesting as being in a high state of preservation, little injured by time after a lapse of nearly 700 years—is easily accessible; it consists of a series of lofty vaults, semicircular and groined arches built on massive piers, which are approached by a descent of steep steps built in the timber yard of Mr. Bayly, George's-hill, who has utilized them since his occupation for the purposes of his trade. Opposite to the steps and in the first vault is a deeply-arched recess in which is a well of the purest water, said to have been dedicated to St. Ann and from which the adjoining street derives its name. On the left of the entrance vault is a built-up opening which we were informed closes a vaulted passage, which tradition tells exten-

ded to Christ Church, being tunnelled under the river, and used at a remote period by the monks for the purpose of attending high mass at the cathedral. Some few years ago a working man procured a large ball of twine and some candles, with which he proceeded to explore the passage. He tied the end of the twine at the entrance, unwinding it as he went, until he reached, as he considered, as far as Ormond-quay, when he was obliged to return, being driven back by foul air; the entrance was closed up in consequence of this exploit. The vault described above conducts to another, upwards of 150 ft. in length, averaging 15 ft. wide and fully 12 ft. in height to the soffit of the arches; numerous built-up openings appear on either side, together with several deeply-arched recesses, which our cicerone informed us were originally occupied by altars. This vault leads to another of smaller dimensions, the ends of which are built up, evidently shewing that at a former period they extended further. In this latter vault is a semi-hexagonal shaped deep recess with an aperture over it, carried through in the superincumbent masonry, built like an ordinary large flue, which must have been originally intended as an air-shaft, and carried to the summit of the building, of which possibly there were many.

We could extend this paper much further in giving more minute details, but our idea has been only to draw attention to these memorials of a past age—several of which exist in this locality,—hitherto unknown to many; while we leave in abler hands the further description of the present remains of the buildings of the Dominican Fathers, where ages ago the solemn strains of religious chaunt, re-echoing through these lofty vaulted chambers, was an every-day occurrence.

There is another relic, but of a different description, preserved in a rudely-shaped niche formed in the southern enclosing wall of the Roman Catholic Church of St. Saviour, Lower Dominick-street; it is called the white cross, and is an ordinary Latin cross of sandstone, about 3 ft. by 15 in.; it rests upon a sort of corbel bracket, roughly shaped in the form of a Greek cross, in which are the remains of the original iron cramps which held it in position, and the following date—MCCXXXII, now scarcely legible, may be discerned upon it. It was, we understand, dug up several years ago in the excavation made for additions to the Four Courts.

CORRESPONDENCE.

THE "CARPENTERS' ASYLUM." TO THE EDITOR OF THE IRISH BUILDER.

SIR,—As you take an interest in every matter that can elevate the art and handicraft of this country and our workmen, as evidenced by many articles which have appeared in the pages of the IRISH BUILDER, you will not think it amiss of me in writing a few brief observations on a neglected subject. It is nearly fifty years (if not over) since a noble idea was conceived by the Regular House Carpenters of Dublin to found an asylum for the old and respectable members of their body who were no longer able to work. The idea was conceived at a time when the building trade was good, but it was equally good at different periods since. Well, sir, the Asylum, after some delay, was at last finished, but from that hour until the present no inmate in the sense intended ever found refuge within its walls, unless we term the hall-porter or beadle who was entrusted with the care of the premises. As one who worked at the bench for years myself, and who subsequently passed through all the grades from foreman to clerk of works, and even beyond this, I regret very much the lack of spirit amongst the carpenters' body that should have allowed such a grand idea to be abandoned. Thousands of pounds have been expended over mischievous and fruitless strikes and other trade disputes, but not one pound has been expended in an earnest attempt to carry out the original intention for which the building strangely enough called a "Carpenters' Asylum" was erected. This asylum building has never been devoted to any other pur-

* Contributed by William Hughes, Esq.

pose than for meetings of the body, and, as far as I am aware, it has never been let or loaned for the meetings of any other trade bodies of the building branches. Had the carpenters' body established a technical school or classes within its walls for the instruction of the junior members of their trade in the principles of their craft, what a vast amount of good would not have been accomplished, and what credit might not have been earned by the carpenters of this city? Either as a carpenters' institute or a carpenters' asylum, this building could have been utilized to the advantage of the trade or of its decayed members. Whether the building is to for ever remain in its present state, it is not for me to augur; but the sooner the stigma is wiped out the better. While the operative bodies in the principal English towns are competing manfully and triumphantly in schools of art, it is indeed deplorable that none of our building trades in Dublin will make an effort to elevate the condition of their members or maintain the dignity of their olden crafts. I would be one of the last to deny moderate refreshments to our hard-working artisans, but to my own knowledge there is as much money expended every Saturday night and Monday in drink by the building mechanics of this city as would support a number of their decayed members. Every one of the building trade bodies of Dublin ought to have a fitting hall for meeting, and there is not one of them but could with a little exertion establish an asylum for the good paying and respectable members of their trade when past their labour. Many respectable mechanics in their old age would thus be saved from the workhouse. Under some circumstances the outdoor-pensioner system could be adopted, if a fund was established by a series of small subscriptions ranging over a number of years. Under the present management and conduct of trade bodies in this city, there is little or no funds available for any purpose. If a great dearth of work was to take place in the building trade, every one of our building trade societies would be in a few days in a state of bankruptcy, unable to assist one of their members to live or to get a job for him.

I would seriously advise some, if not all, of our trade societies to establish co-operative stores in connection with their trades; and when this proved a success—which it would, if properly managed,—the co-operative principle might be carried out farther in the direction of carrying on work on their own account. What many other similar bodies achieved throughout England and on the Continent could also be achieved in Dublin. I hope that my observations will be accepted by the carpenters and other building trades in this city in the same good spirit in which they are written, and that an improvement may soon be visible, and find an early record in the pages of the IRISH BUILDER.—I am, sir, yours truly,

A RETIRED CLERK OF WORKS.

MUSICAL CRITICISM.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have read with pleasure your recent criticism on musical festivals (which in fact were only concerts), and it did not appear too soon. You represent independent theatrical criticism in many respects like *Figaro*, which I am glad to perceive, and allow me to say, go on and prosper.—Yours, with regard,

A READER OF THE BUILDER.
Dublin, 29th January, 1873.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have read with great pleasure your able and much-needed remarks on Dublin criticism. I submit to your notice a criticism written in a Belfast journal on the same party which were lately in Dublin. I was myself at the concert, and the remarks seem to me fairly made. I wish some journal here would say as much for the other local papers as you have said for the Dublin ones. Trusting you will excuse my troubling you.—Yours truly,

A MUSICIAN.
Belfast, Jan. 17th, 1873.

[We are thankful to our correspondents for their good opinions of our efforts in the interest of true musical criticism. We have received commendatory letters from several persons, not alone in this city but from across the channel. In reply to some, we plead guilty of having written strongly, yet we have written honestly and with the sole desire of leading to a reform, and of stamping out an almost chronic and mischievous abuse.—ED. I. B.]

A BUILDER'S WIFE ON TECHNICAL EDUCATION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—It gives me much pleasure to notice in your pages your articles on technical education, and the many sensible and practical remarks that are made from time to time with a view to the developing the latent talent and bettering the condition of the operatives in the building branches. My husband, who takes an interest in the subject as well as myself, would long since have written a letter to your journal on the subject, only for his many pressing engagements. On his and my own behalf, and in the interest of the building operatives of Dublin, I now write these few brief remarks. I will be very happy to assist in any earnest movement made by the building workmen themselves in connection with their respective trade bodies to help on the young members of their order. I regret to find so many youths in the building trade so poorly educated. I think it is imperatively necessary that apprentices to the carpentry, masonry, bricklaying, and plastering trades should be better educated than they are. A little knowledge of mathematics and some skill in drawing are absolutely indispensable to building workmen, if they wish to rise in the world. We have, it is true, a school of art in this city, but our young men who are already apprentices do not seem to attend in any number these classes. Could not evening classes of a rudimentary nature, with a reading-room and a small library of practical and useful works, be established in connection with each trade hall, where both youths and adults would find both pleasure and instruction by attending. Some of our professional and college men would, no doubt, gladly volunteer occasional lectures on technical and trade matters. I would myself contribute a number of useful books on architectural and building matters, and solicit others to do the same. Perhaps you will kindly insert these few suggestions from yours truly,

A BUILDER'S WIFE.

"THE JUNIOR ARCHITECTURAL ASSOCIATION."

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I observe in the last number of the IRISH BUILDER a letter from "An Architectural Assistant" desiring to know what the Junior Architectural Association is doing at present. In the first place, I know not why it should be called the "Junior," as I am not aware that there is a senior or any other architectural association in Ireland, as the Irish Institute is not an association, but an Institute of Architects. If your correspondent had read the reports of the different meetings which have appeared in your valuable journal, he would have seen that since the commencement of the session in October last five general meetings have been held, as follows:—October 3, President's address and Conversazione. November 7, Mr. W. Butler read a paper on "Christ Church Cathedral." November 14, Mr. Owen read part I. of his paper on "Concrete and Fireproof Construction." November 28, Mr. Thomas Drew, R.H.A., read a paper on "Architectural Excursions and their Uses." January 9, Mr. John L. Robinson read a paper on "Architectural Perspective," and on January 30, Mr. E. Trevor Owen will also read a paper on "Architectural Details in Common Use." In addition to these general meetings, meetings of the two classes of Design and Construction have been held every Thursday evening from the commencement of the session, and have been remarkably well attended by the members. Your correspondent cannot surely expect that more could have been done in such a short time. The architects of Dublin shew their approval of the Association by this significant fact, that the number of its members has almost doubled since its opening meeting in October last. If "An Architectural Assistant" wishes to forward the undertaking, let him join the Association and assist it by his counsels and subscriptions.—Yours &c.,

A MEMBER FROM THE FIRST.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The communication in your last issue from "An Architectural Assistant" we cannot let pass without comment. Your correspondent must not read his "IRISH BUILDER" with great attention, or he would very frequently be reminded of the existence of the association, and of its efforts to improve the standard of architectural knowledge through its classes and general meetings. We

think that "An Architectural Assistant" would best shew the interest he takes in his profession by joining the association and endeavouring to the utmost of his ability to uphold its position.—Yours faithfully,

THOMAS H. LONGFIELD,
JOHN L. ROBINSON,
Hon. Secs., Arch. Asso. of Ireland.

January 27th, 1873.

[We consider it quite sufficient on the present occasion to print "without comment" the above two letters respecting the Architectural Association of Ireland.]

A VOICE FROM "THE ORCHESTRA."

OUR musical contemporary, the *Orchestra*, has waxed humorous in commenting upon our article, "Musical Festivals and Musical Critics," which appeared in our last issue. As we are not thin-skinned we can take a joke, and a poke in the ribs to boot, whenever a friend or an enemy desires to amuse himself. Maugre the irony of the *Orchestra*, we are glad we can count it an ally in our crusade against puffing and humbug. We stand corrected for a slight typographical error which occurred in the hurry of getting to press—"Mercadante" being printed for "Mercadante"; but otherwise we hold intact to the opinions we expressed, as the truth, the whole truth, and nothing but the truth. The clear-seeing *Orchestra* allows the IRISH BUILDER credit for having detected all the Dublin journals but one in criticizing a piece not sung at all. The *Orchestra* may recollect it was once attacked by a Mr. Desmond Ryan (and an action at law taken, Ryan v. Wood), when this despicable practice was proved against Desmond Ryan, i.e., that that he once or twice was guilty of criticizing things neither sung nor played. Apart from this system, we consider the indiscriminate fulsome praise that is bestowed by some of our Dublin would-be critics who have witnessed pieces, is as pernicious as if they had written without seeing them.

The IRISH BUILDER is neither a pretended nor a pronounced musical organ; but its conductors have a high respect for the musical art, and for *bona fide* musicians, singers, and actors.

The true friends of the stage and the orchestra are those who will point out their faults; and their worst enemies are those pretending friends upon the Press, who ladle out their praise alike in sickening quantities to the "star," amateur, and charlatan. Let praise, by all means, be given to undoubted brilliant talent. Let words of encouragement, as well as words of advice, be given to the earnest and struggling amateur; but to all discordant screechers and musical pretenders, the condign punishment they merit. With a new race of educated musical and dramatic critics, who would write the truth, many a young singer and actor would be warned off the stage in time, and would, in after life, be thankful to their critics for giving them the hint to betake themselves to other walks of life for which they were more fitted.

We hope our contemporary the *Orchestra* will credit us with a little common sense in what we have written. Hearing but a single voice in our midst raised in the interests of truth, and seeing debasement on every side, we raised our pen and flung our small weight in the scale for what it was worth. Until a much-desired and visible reform sets in, no matter who may howl, we shall apply the lash: sufficient for to-day is the evil thereof.

PULPIT—NEW R. C. CATHEDRAL, LONDONDERRY.

THE principal material of which this pulpit is composed is Caen stone. The shafts are of Middleton red, and Clifden green marbles. The base of the work is stunted and stooped to receive the bases of the pillars or shafts, upon which are placed the caps, each one of which is carved in natural and conventional foliage, all different in design. Upon the capitals is placed a boldly-projecting cornice in one stone, which serves for the platform of the pulpit. Above this line it assumes the octangular form. In seven of its sides are deeply-sunk niches with canopied heads supported by triplet columns with crocketed hood moulding. In the spandrels are inserted coloured crystals. The subjects in the panels are:—1. Christ's Sermon on the Mount. 2. St. Peter Preaching. 3. St. Patrick Preaching before the Kings at Tara. 4. SS. Matthew and Mark. 5. SS. Luke and John. 6. St. Patrick. 7. St. Bridget. The groups are sculptured in the best and most artistic manner, and in strict accordance with the recognised rules of christian art. The steps leading to the pulpit are of Caen stone richly wrought and moulded, having a wrought iron rail of exquisite design of leaves and foliage beaten and gilt. This fine specimen of Art-work has been produced at the studio of Messrs. Earley and Powells. It gives us another guarantee that this enterprising firm are determined to shew that in excellence of design and careful execution they are not to be surpassed. It would well repay any parties interested in the production of such works of Art in our midst to pay a visit to the Camden-street Works.

IMPEDIMENTS TO NATIVE INDUSTRY.

THE MARBLE TRADE.

THE Irish marble and other building and ornamental stone merchants of this country have a most serious and justifiable cause of complaint, in the manner by which they are treated by railway or steampacket companies. Mr. Alexander Colles, in a letter to Sir John Gray, draws public attention to an injustice that must be remedied. We cannot do better than by giving his own words:—

"Owing to the extraordinary high rate for carriage, &c., our cheap water power and low wages are rendered useless. As you are aware, I carry on the marble business here, employing a large number of hands, aided by water power and suitable machinery, the works having been erected at a very heavy cost. I can produce manufactured articles cheaper even than Belgium can produce them; but, owing to the heavy charge for carriage, the Belgians can undersell me in London and elsewhere. To show you how much better off the English are, in the way of carriage, than we are, I submit for your information a few instances. I can send marble in cases by steamer, for exactly the same charge, from Liverpool to New York, as I pay from Kilkenny to Liverpool. I can send marble from Kilkenny to New York at 15s. per ton cheaper than I can send from Kilkenny to London. I can send marble from Kilkenny to Melbourne 15s. per ton less than I can send from Kilkenny to London. Another matter is, I think, worthy of notice. I can carry heavy blocks of Italian marble from Liverpool to Kilkenny for 25s. per ton; I cannot, by same route, send Kilkenny marble to Liverpool in heavy blocks for less than 50s. per ton, or double the price. This is not justice to Ireland. The high charges nearly prevent business being done between here and England, but if we had low rates I could put on double the number of hands, and give such increased employment as would benefit this city. New enterprises will not be established here unless matters are changed. The telegraphs are now paying much better at 1s. a message than when 2s. a message was charged. If the railway fares were reduced by 50 per cent. the receipts would be increased."

On first thoughts, after reading the above statement, one would almost be inclined to think there was a tacit or secret understanding between railway directors and others to throw what obstacles they could in the way of the development of Irish building materials. We import largely from England and Scotland, and, in justice, we desire to have the same fair play accorded to the Irish manufacturers as to the English and Scotch. The sister kingdoms can supply us with many building materials which are not produced here, and we can export several articles for which there would seem to be an increasing demand on the part of architects, engineers, and builders across the Channel. Is it not, then, monstrous that our native industries should be crippled—yea, strangled almost—by the heavy railway fares imposed on their transmission? In our notice of Professor Hull's work in our present and former numbers, it will be seen the great extent of our granite, marble, limestone, and sandstone resources, all of which are available. Coupled with their development, our water power is capable of turning machinery to almost any extent. What boots it, after all, as Mr. Colles remarks, to have cheap water power and low wages, when such exorbitant charges are exacted? Is it not, we ask, a glaring and manifest injustice that while heavy blocks of Italian marble can be sent from Liverpool to Kilkenny at 25s. per ton, that 50s., or double that price, is charged for sending marble from Kilkenny to Liverpool? There is only one explanation to be given to this monstrous injustice, and there is only one fitting epithet to apply; but we must forbear to give expression to it.

Let all, however, understand what "justice to Ireland" means, and see what a fine handle it gives to politicians of the most advanced type, who can find sermons in stones and other missiles for pointing a moral or striking a blow.

CIVIC LYRICS.—No. XXX.

HOLD YOUR TONGUE.

If you never went to school,
Hold your tongue!
If you would not act the fool,
Hold your tongue!
Seem absorbed with thoughts profound,
Look point blank upon the ground;
Speech may have a fatal sound—
Hold your tongue!

Though you're one of the elect,
Hold your tongue!
Silence will have its effect—
Hold your tongue!
Betimes you may shout "Hear, hear!"
Cry "Oh, oh!" or give a cheer;
Otherwise throughout the year
Hold your tongue!

If, like others, you would win,
Hold your tongue!
Act, but always from within—
Hold your tongue!
If you've gumption, ten to one
Other backs you'll ride upon
To fame, with this *sine qua non*—
Hold your tongue!

Next year you may be Civic Chief—
Hold your tongue!
Let other folk cry out "Stop thief!"—
Hold your tongue!
Turn your back if colleagues rob;
Smoke your "dhudeen" by the hob;
And if a windfall fills your fob,
Hold your tongue!

CIVIC.

IRISH MUSIC.

DESPITE the most adverse and discouraging circumstances, the soul of Irish music lives intact. Handel came and went a century and a-half ago, when the fame of Carolan's compositions had entirely impregnated the blood of the nation; but though the former great master ravished the ears of the elite, he left our olden love undimmed. The great German

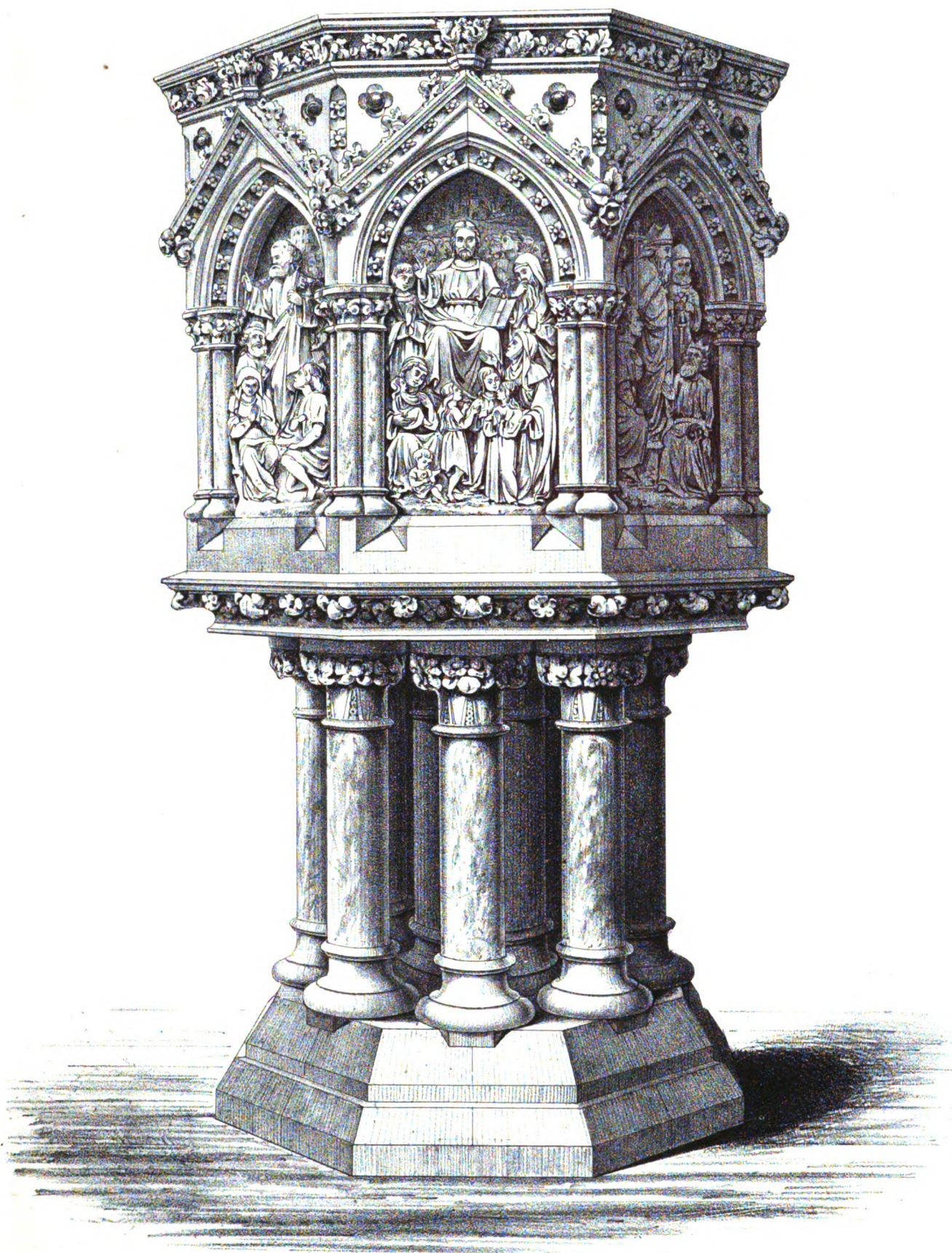
musician himself struggled vainly, for a long period, against the rage for Italian music, yet he eventually conquered, and died with his fame assured.

Towards the close of the last century the labours of Bunting commenced, and probably it is to his labours, in a measure, we owe the melodies of Moore, which have done so much to preserve in a drawing-room dress the sad, the soul-stirring, soothing, burning, homely, and exquisite minstrelsy of this island. Upwards of thirty years since, a creditable and noble attempt was made, in the pages of the Dublin "Citizen Magazine," to collect, restore, and perpetuate the grand old national music of Ireland; and subsequently Thomas Davis, in the pages of the early "Nation," worked with might and main, with a heroic love; and had his knowledge of music been equal to his intense love, there is no doubt his labours would have accomplished much. It should be remarked, however, that he died young, and we cannot say what he might not have achieved had he lived. From the days of Giraldus Cambrensis to the present, the greatest enemy of our country has never ventured to speak disparagingly of Irish music. In whatever field may be chosen—the gay or sad, the humorous or sublime—there is a chord which can be struck to rouse the most lethargic and thrill the most callous friend or foreigner. Take our antique war tunes, our slow or quick marches; pick out our dancing tunes, our Irish jigs or planxties; search through whatever field you will—and you may run through the whole gamut—and there will be notes everywhere to melt you to pity or rouse you to indignation or martial heroism.

Who says the Irish have no music? Let the liveried varlet stand forth, until we measure his shadow, as his first step over our border should answer the length of his grave. We have been told, indeed, we have no modern music; yea, we have been told that Ireland never produced a drama. And who tell us? Those who trade on our people's credulity, and our journalists' slavish silence in a direction where there should be a defence, if not a defiance.

If we are to have Italian operas and Italian and German music, in canvassing for and supporting the foreign exotic there is no reason why the home plant should be trampled under foot. The symbolical plant of our fatherland is, however, more than a hardy annual; it can bear being trodden upon, and a little crushing appears to do it good, as a roller does the soil. In the dashing and stately, slow or quick time, what can compare with such tunes as "Sios agus sios liom," "Michael Hoy" (Hoey), "Gallant Tipperary," "The Boyne Water," "The Fox Chase," and in that softening, mournful cadence, what excels those famous laments of ours, which touch the very quick of patriot and lover? Of this order, we need only allude to "Limerick's Lamentation," "Savourneen Deelish," "Drimindhu," "Lough Sheelin," and some others of a cognate stamp.

Tinged as some of our war songs, marches, and laments are with deep political feeling, they are nevertheless valuable; and as the struggles they celebrate are now matters of history, of failures and successes, we are inclined to look on them as historical instead of political relics. The music of "The Boyne Water," "Limerick's Lamentation," "The Minstrel Boy," or "The Memory of the Dead," ought, in a national musical sense, to be as valuable to one class of our countrymen



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as another. We can forget party creed and class in our love for our national minstrelsy.

Unfortunately, in one sense our modern Irish composers have written for an appeal to a foreign ear. Balfe or Rooke, though they have earned fame by attuning their lyres to sweet music, little, if any, of it finds an echo in the native heart. Moore's beautiful airs were the airs of our country long before the poet was born. He wed them certainly to soothing and burning words, but the language was not the language of our people. It is, perhaps, after all fortunate for his fame and for us, that he wrote the "Melodies" as they appear, for in their present garb they reach hearts in millions of homes where they might not have found, in another form, an entry.

Several attempts have been made in the last and present century to found in this country musical societies or academies of music; but all of them have been short-lived. More than one of our learned bodies have offered and given prizes for assisting in the development of our native music and musical literature; but the spirit of continental fashion has got such a tight grip upon the throats of our latter-day organists, harpers, and pianoforte players and their patrons the singers, that it will require a little manly nerve to effect a moderate change.

We do not despair, however, if those who propose to cater for our people through the instrumentality of a new Academy of Irish Music will but do their duty. We have of late years English operas, but though we speak the English language here as a people, yet, without aiming at desperately patriotic things, we see no reason why we could not have a series of Irish operas. It is not in the language of our people we seek to see it, but in its music and subject, each and all racy of the soil.

Before this century closes we may even see a great oratorio produced worthy of the musical genius and deep religious feeling of our people. In the production of English operas Irish genius of late years has contributed not a little in conjunction with other workers. The modern oratorios or great sacred musical compositions had their first development in small fields before they burst upon the world in splendour.

In connection with our early churches, sacred music was not neglected, and, though the language might be Latin, the voice was the voice of God. Sacred plays were enacted in Ireland as well as in England from three to five centuries ago, and continued down to a late date. "The Mysteries" or "Moralities," a series of sacred dramatic representations, were enacted in this country; and, though eventually these representations became to be much abused and diverted from their original design, they kept alive a spirit that was utilised at a later period and in a more fitting service.

We cannot conclude these observations, written *currente calamo*, without thanking Sir Robert Stewart for his efforts, illustrated by his interesting lectures and in other directions, in the interest of the native music of Ireland. We feel that we are not travelling out of our path in this journal in helping on a desired reform. Music and Architecture have a more close connection than what is supposed. Music is a matter of scale and expression, so is all good architecture, and our architects of the future will need to design buildings intended for musical represen-

tations with a view to musical effects. Sound must be preserved in its flowing volume, and echo controlled. Each of us in our sphere, though working apart, can assist each other in establishing a universal harmony between nature and art. The world needs more true music and harmony, and it seems to be as requisite to the human machine as oil is to a motive engine. We all live, move, and work the better after enjoying good music.

THE WORK AND THE MAN.

To, F.R.S.

I know a man, and many know him too;
He worked unceasing for the common weal.
Oh! would like him our country had a few,
To practise what they should both preach and feel.
For more than half a lifetime he has stood
Battling for souls alike in want and wealth;
His conquests were not won by tears and blood,
But as a pioneer of public health.

No voice was heard from Pulpit or from Press
When, self-reliant, he his task began.
He look'd around, and dirt and wretchedness
Were everywhere long wed to home and man.
Plague walked the land from nurseries of filth;
The people's homes were hot-beds of disease;
The nation suffered from its rulers' guilt,
Yet, grappling with, he strangled foes like these.

Still, as whilom in his earlier days,
His voice and pen with all their wonted force
Are heard amid the din of public ways;
And in more than one unfrequented course,
A second Howard, he has lived and wrought,
Visiting haunts with want and fever rife,
Searching out the causes where few have sought,
And striking fresh "Another Blow for Life."

Long may he live the glory of the land
Which gave him birth and honours bravely won;
Long may his fertile brain and facile hand
Be exercised in doing good, undone!
Father of my thoughts, in sterile fields, now green,
You've sown the seeds—the fruitage is your claim.
Right nobly you have served your God and Queen,
And proudly borne your brave old Saxon name.

Civita Eblana.

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THE ANCIENT TRADE GUILDS OF DUBLIN.

THE old trade guilds of Dublin, though once powerful as minor corporations in connection with the greater corporate body, exist now but in name. In an electoral sense we have "freemen" descendants of these trade guilds, but for practical and living purposes our trade guilds are "airy nothings." Before the passing of the Municipal Reform Act, Dublin was represented by a lord mayor, 2 sheriffs, 24 aldermen, 124 common councilmen (28 being sheriffs' peers), and 96 representatives of the 25 civic guilds of trade; there was also a recorder and other municipal officers. Each of the minor guilds had both masters and wardens. Up till the close of the last century these guilds of trade were very exclusive. Though members of the Catholic persuasion at an early period were strongly represented in these bodies, they were, during what has been called the "penal days," rigorously excluded; however, about the year 1798, by the unity of Protestants, Dissenters, and Catholics alike, a Catholic Relief Bill was passed, removing some of the religious disabilities affecting that religion, after which Catholic wardens and members were voted in. Independent of religious matters, between 1800 and 1840 these guilds continued to be governed in an exclusive way, and instead of existing for useful purposes in the spirit of their formation, they existed for little more than political objects. The Dublin guilds were in name as follows:—The

Guild of Merchants, Tailors, Smiths, Barbers, Bakers, Butchers, Carpenters, Shoemakers, Saddlers, Cooks, Tanners, Chandlers, Glovers, Weavers, Dyers, Goldsmiths, Coopers, Hatters, Stationers, Bricklayers, Hosiers, Curriers, Brewers, Joiners, and Apothecaries. Some of the above guilds embodied other trades not mentioned. Comprised in the Stationers were the painters, stainers, and cutlers, and so with others. Each had their patron saint, insignia, and their meeting places, and when they met for the transaction of business or the election of masters, wardens, and officers, their gatherings were called a "post hall." From being originally *bona fide* guilds of trade, these bodies, like the London ones, ceased to represent the trade from which they took their title, except in mere name. Clerks, attorneys, shopkeepers, &c., were often elected as members of the Guild of Carpenters, Bricklayers, and of other bodies, with the object, not of upholding the dignity of trade or effecting a great public improvement, but for the sole object of making their members "freemen" and securing an additional political vote. Had our minor corporations kept to their original purpose and not allowed themselves to be drifted into the vortex of political strife and become mere political feeders to the Corporation, the Irish Municipal Act might have left them untouched. Subsequent measures and a variety of circumstances have helped to not only stamp them out of being, but to nearly efface their memory altogether. What the approximate wealth of the Dublin guilds represented, in income and trusts, we have as we write no data by us to show. We would like to know what trusts were held and managed by each or all or any of them—what hospitals, asylums, schools, or other institutions they founded, or were founded by members belonging to these trade guilds.

The history of our ancient trade guilds from their earliest date to the passing of the Municipal Reform Act would be a useful chapter in the history of Dublin, and we would feel obliged to any old citizen who would supply us with a little information on the subject. Perhaps our distinguished *litterateurs* and townsmen, Mr. Samuel Ferguson or Mr. J. T. Gilbert, would kindly furnish some information to the writer, or to the readers of the IRISH BUILDER, upon this not unimportant subject. *

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a meeting of the above, held on the 27th ult., a paper was read by Mr. H. H. Statham, associate (Liverpool), on "Architecture Practically Considered in reference to Music." The main object of the paper was to suggest some improvements in the planning and arrangement of concert rooms, so as to place performers and audience in the best relative positions for hearing and being heard. The long form of room was advocated for performances on a large scale, as conveying the sound in a more direct and undisturbed manner to the audience, whereas in a wide hall with a lofty roof sound was liable to be dispersed and lost. The tendency to increase the size of concert halls very greatly, as exemplified in the Albert Hall, was a mistake, as it was impossible to ensure clear definition of the music in rooms beyond certain limits of size and area. It was necessary also to consider the nature of the performance for which a room was built. The large rooms built for oratorio concerts, for instance, were utterly unsuitable for the performance of chamber music, where every one should be as near the performers as possible, the proper position for the latter in such a case being the centre of the room. Some suggestions as to the architectural treatment of such buildings were added. The paper was illustrated by diagrams, and discussed by Mr. T. Roger Smith, Mr. Roberts, Mr. Seddon, and others, and by the chairman, Professor Kerr.

ARCHITECTURAL DETAILS IN COMMON USE.*

THAT a good deal of our present architecture has too great a tendency to the minute and sometimes even frivolous elaboration in matters of detail, both constructive and decorative, I think there can be little doubt; and if a fair comparison is made between the works of the present day and those of ancient date, having regard to the progress made in modern appliances of all kinds, I may venture to say that such a test would be found to tell against us in a very marked degree, for in most of the grand old works of bygone times we find evidences of a most careful forethought bearing upon the conditions imposed by climate, adaptability of site, and materials, and so upon the design itself to a degree seldom so clearly presented in our day; and it would appear that the idea of utility and fitness had been retained from the beginning to the end of the work, great and good proportions of masses in relation to each other being held only second in importance to the purpose for which the structure was intended, a good deal more depending upon breadth and dignity so obtained than in the consideration of the details themselves, and quite independent at first of the capability of such and such parts to become centres of beauty, so to speak, or to receive ornament or enrichment of any kind. In proof of this, is it not to a large extent true that their works would still be grand and impressive, and even artistic, if entirely denuded of the subordinate details?—and most certainly they would be so if entirely stripped of such as are purely ornamental. The early Doric temple, the feudal fortress, or Norman church, as well as the structures immediately following, testify to this, in each of which energy and strength the bone and sinew—or, in other words, the parts absolutely necessary to the work are made to take a prominent place instead of being suppressed and hidden, as if they were something to be ashamed of, or of things that must take a place in the structure, but in such a way as not to meet the eye of the beholder; instead of letting him know, first, how truly such and such a thing fills its allotted place, and, secondly, how natural and well it looks therein.

Many existing works bear testimony to the better judgment and taste of the old architectural masters, and the lapse of perhaps ages has not obliterated the fact, that had they a wall to build, a column to erect, or an arch to turn, there is something about the mode of doing it so thoroughly earnest and consistent as to be very much at variance with the makeshifts, coatings, casings, and daubing of too many modern works; we shall therefore do well to pause and consider and profit by the example precedent sets before us in these matters without the least fear of servility, as there will always be abundance of room for originality in the various requirements as they arise under totally different circumstances. A plain wall of ashlar, without a single moulding or break upon it, if properly built and in the right place, is not by any means a thing to be despised—it may even be quite a necessity in a composition, and, like a pause or rest in music, give point and effect to some neighbouring part, or serve to harmonise and connect servile parts. Neither should good honest rubble work be a thing to be ashamed of. I never look at a well-built rubble wall, whether new or old, that I do not feel a sort of satisfaction from its very ruggedness, and observe how well it sets off something near hand of a more costly kind; and then there are ways without end of varying its character, by introducing different kinds of courses of any fit material that may be conveniently obtained, leaving it a rubble wall still; and if, as before remarked, it is well built, why should we cover it up with a foreign material, and thereby make it a lasting deception?

I have found myself comparing some buildings with the modern exquisite, or I might say with ancient and modern, for I suppose

the dandy was the same kind of animal in all times, having a good figure probably, and even a little grace and general deportment, but in the main depending for effect upon the quantity of ornament and frivolity to be displayed; and, although there may be no better work in itself than that of the carver in the one case and the jeweller and tailor in the other, they become rather offensive than otherwise when misapplied—at any rate, some buildings as well as some men would be all the better if eased of a little of such profuse adornment.

Although I do not mean to depreciate, by the following hints, the Classic or any other known and esteemed school of architecture, either generally or in regard to their details—ideas and external circumstances having since their creation so materially changed—still I may be permitted, without offence to the admirers of any particular order, to express my thoughts with regard to some parts which, “from my youth upwards,” I never could understand as necessary, either in construction or otherwise, although the discovery and introduction of them are backed by various plausible theories as to fitness, &c., and even interspersed here and there with beautiful and romantic stories, to account for the happy chance by which suggestions were afforded for some well-known combinations worthy in themselves of being handed down from very early times, on account of their intrinsic beauty; but, to my mind, the most beautiful object, or combination of objects, however at first suggested, or however appropriate under certain conditions, should not be taken as precedents affording sufficient grounds for adopting the same thing, where the conditions and circumstances may be totally different. As I have ventured to refer to the Classic school, take, for instance, the well-known triglyphs dividing into metopes the entablature of the Doric order, which are said to represent the ends of timber beams forming a portion of the internal construction of the roof or ceiling; recollecting that these are worked out of the solid stone, and that it is essential that they be accurately formed in the extreme, I would ask, what particular element of beauty is contained in them, that any modern architect should follow? Along with the arbitrary rules of modules and minutes applied to every part of the structure over the ground line, and perhaps beneath it, for anything I know to the contrary, and in the same way consider the details of any of the other orders, that is to say, as parts of the construction essentially necessary, and I will venture to affirm that you will find it necessary to invent a reason for their introduction, for certainly it will not be apparent. I do not mean to attack these glorious works of antiquity in an antagonistic spirit, but rather that they should be left as they really are—things of beauty, but things of the past; and although it is necessary that the student of architecture should be familiar with the landmarks in the art, it should not have the effect of shutting him up to arbitrary rules, to the exclusion of his own individuality in his works, merely because this or that is a noteworthy example; and I would be inclined to fearlessly omit the imitation of such matters as guttæ in the soffit of a cornice, patera, floral wreaths, bull's heads, mouldings, and other details, some of which may be in a position never to be seen by mortal eye after that of the mason who cut them, together with myriads of dentils, consoles, and the like; and numberless repetitions of diminutive pediments, doing nothing except wearying the mind and looking very costly where costliness is not required. Instead of these, rely more upon good and well-conceived proportion of masses consistent with the general arrangement, and very little, indeed, upon merely ornamental details. In this way, I think it will invariably be found that certain parts are really capable of receiving such a legitimate amount of art-treatment—being, of course, of themselves prominent and important ones—as to concentrate the points of beauty to such parts in a perfectly natural manner.

I may go so far as to say that instances in this city can be adduced where the breach rather than the observance of the strict rule are by far the most successful productions, in witness of which I will mention the Bank of Ireland, the Custom House, the Four Courts, and other works of the late architect, Gandon, and contrast them with the more strictly classical productions or rather reproductions in this and other cities (I have one in my mind's eye at this moment—a temple for Christian worship, by the way,—the bare recollection of which impresses me with heaviness; I will not say more about it than that it is considered to be an excellent modern example of the Doric order), and I feel assured that few will have a doubt as to which manner is to be preferred.

In referring to what we call the Classic styles, I do not intend my remarks to apply exclusively to them, whether Greek, Roman, or the more recent ones, including the Gothic, each of which have more or less a relationship the one to the other in order of time, and I hope you will consider my remarks rather in the light of suggestions bearing upon all than as leading to any one style in particular, with a view to avoid everything that is not consistent with the wants of this utilitarian age, or to this climate of ours, where the sun only shines as if by special favour. Under these circumstances I fail to see the propriety to adapt or naturalize as it were, an order of things to a considerable extent at variance with existing conditions and requirements. Why should we so carefully copy and adopt a system, and at much fruitless labour try to make it fit—numerous elegant columns, it may be, surrounding a building, the walls of which ought not to be pierced with windows (or you commit an error in the order), although in a country where all the light and heat we can possibly get are absolute necessities? and yet this is done in spite of the fact that the pet model bears unmistakable evidence that light and heat were probably rather in excess in the country in which it was first erected; or in a foreign tour why do those who are so fortunate as to be able to make one—should fill their sketch-books with good things culled here and there, and reproduce them evidently under the impression that they will be equally appropriate here. Impressions received and suggestive hints wherever they can be found are one thing, but to reproduce the thing itself appears to be rather inconsistent. Any true artist I think is quite content with the privilege of studying some grand old painting, and understanding the true spirit of the work; but he would hardly venture to exhibit a *fac-simile* and leave people to imagine that it was his own.

Suppose we try to analyse as it were some fine old building; and as we cannot remove its array of columns without bringing down the entablature and pediment about our ears in the one case, or the array of sturdy buttresses, &c., in the other without perhaps a similarly undesirable effect, we will leave them where they are, and proceed to ruthlessly strip the carcass of every detail, sculpture included—whether warrior, saint, animal, or plant—which is not necessary to the actual constructive stability,—what would remain?—a very plain-looking piece of work indeed; still a great amount of dignity might remain, arising from good, well-balanced parts and general proportion; not however, thus denuded, such a model of perfection as to induce the careful copying, irrespective of time and place. No one of us, of course, would desire literally to treat such grand old works with this imagined vandalism; but we might feel such a desire with regard to modern efforts, and I fancy that if so treated a good many of them would have nothing left but naked ugliness, as any pretensions they possess are those produced by the unseemly application of “borrowed plumes.”

Some one has said (I think it was Mr. Ruskin) that the buttress and other important portions of Gothic architecture are “idle servants”; but with all deference and respect

* By Mr. E. Trevor Owen. Read at meeting of Architectural Association of Ireland January 30th, 1873.

to the author of that remark (whoever he was), I must presume to deny the accuracy of the assertion, for whether that member be used in connection with a lofty tower, great gable, or an extended flank, I assert that it is excellent construction, and perfectly consistent when judiciously applied, for it enables us to use a thinner wall, and still thick enough for all practicable purposes, than if it were dispensed with; and to place the maximum of stiffness and strength exactly where it is wanted, and without waste of materials; and in any other situation either it, the pilaster, or other member of an order, is really and in fact an idle servant, and a costly one to boot. To do away with such an useful member as the buttress would, I think, be like saying that a man not only can but should stand upon one leg, as a wall, &c., may no doubt be made thick enough to stand without props; but in the one case it would be waste of material, and in the other of energy, and there would be this difference—that the man would have the advantage of the stone and mortar, as he would have a buttress in reserve, available whenever a puff of wind threatened his equilibrium. And if you agree with me, you will not consider so much the number of noble pillars, clustered shafts, and their usual accompaniments, the division into certain portions, bays, and compartments, defaced arches, and array of external buttresses, that such and such examples may present, as whether these things are really requisites in the construction of the work you may be called upon to design. Better bear the taunt of seeming poverty than run the risk of being accused for wanton display.

The use of iron, however manufactured, has of late years taken a prominent place in many buildings, and of course is admitted to be a most important material, and is perhaps destined to become still more important in future architectural works; but I at present do not believe that, as a purely architectural material, it has been fairly dealt with. But, like many other useful things, it can and does help the architect and builder over many important difficulties, which might otherwise cost a little more money. But in really good architecture, whether costly or otherwise, there are certain situations and conditions in and under which it should not be admitted. I know a building (not in Ireland, by the way) the construction of which will be sufficient to serve as an illustration of the use, and also of the abuse, of that material. In the building alluded to there are four storeys, exclusive of the ground storey, which is a lofty one, resting on an iron girder, supported in its turn by a series of thin metal columns; and the space beneath is equal to fully one-half of the whole ground floor, and this covered space is used by large numbers of persons every day; and what I think objectionable is this—to say nothing of the general construction—that these columns, girders, &c., are all carefully *concealed*, and boxed up in such a way that no possibility is afforded of getting at them, should any contingency arise requiring their examination, without considerable and unnecessary expense; for they are made to assume, by dint of bracketings, boxings, and any amount of plaster, &c., the proportions and external appearance of an elaborate and full-blown order in one of the richest of the classic styles, so as to have quite a presentable appearance. Now, I will not only venture to say that this mode of treating materials is not to be recommended, being anything but true architecture. But I will go further, and say that it is to be positively avoided as dangerous, although the danger may appear remote; and I fancy that, did the human beings frequenting that building know anything of construction, and happened to think of the "Chicago" or any of the great fires of late years, that their placid endurance of such things would come to an end; and I think it is the architect's duty, as best he may, to disabuse the public mind of its tendency to obtain too much of him, under the mistaken idea of economy.

Similar objections might justly be raised with regard to street architecture, so called, in our large cities, where we see storey after storey piled one over the other, apparently in "mid air"; but we, the experts in such matters, know better, for we have observed that they are carried upon refined and sometimes very elegant castings, like bamboo canes, placed a little to the rear of the glass or other equally fragile front. Now all that business and common sense requires can be obtained without this; and being architecturally bad and dangerous into the bargain, we should set our faces against such temptations without fear, even although we know it to be possible that Mr. So-and-so will get his builder to do what his architect would not (I mean no offence to the builders, though).

If, however, cases should arise in which such a mode of construction is resorted to under special circumstances, when heavy masses may have to be carried over space, in no instance should the iron beams or other medium of support be so situated as to be concealed or difficult of access; but I would recommend as preferable in the majority of cases, the retaining of the unmistakable, though somewhat antiquated, brick or stone vault, arch and pier, without forgetting the old and honest timber work, whether in the roof, truss, framed partition or simple beam, as things less likely at times to overwhelm us with sudden destruction, than some of their more modern competitors, which after all give one the idea of clever architectural gymnastics—a mountebank on stilts, looking very extraordinary, but at the same time a rather undesirable method of progression. In a former paper, it was my intention to have gone into the subject of roof construction, but time, then as now, would not admit of my devoting sufficient care to that important requirement of almost every kind of building, because drawings illustrating each kind ought to illustrate such a paper; but I will endeavour to give a hint or two, if you will accept it as such, for consideration. I suppose I may imagine that we have done with the vault or dome in old-fashioned materials at least for all future time, and that we must confine ourselves to timber, iron, and perhaps concrete. Now I think a great respect should still be given to timber, because ideas in that material are not even yet exhausted. The ugly, but serviceable and common tie beam—whether king, queen, or a combination of both—is familiar to each of us, as is also the hammer beam and the varied forms found in old works, in many of which the effort to get rid of the horizontal beam without waste of material is evident. Now whilst respecting all, whether ancient or modern, for the useful suggestions they may contain, we should try to make intelligent progress from the apparent success or comparative want of it which the various kinds present, by studying the circumstances which appear to govern each particular case, rejecting what is not now necessary either in quantity or quality of materials or the principle of construction adopted, providing always that we are quite sure that the conditions by which we may be governed are so far in advance that we can honestly lay claim to better things. A very flat-pitched roof requires very different treatment to a steep one, yet you will sometimes see that the latter has equally heavy timbers to the former, which is unnecessary, the spans being supposed to be the same—the transverse strain being so much greater in the one case than the other. Both kinds have their legitimate place, but I can see no good reason for the unwholesome fear of showing the outside of a good high-pitched roof, providing it keeps out the weather better than the flat one—at least in this country—and you make the interior of it to some extent available, which can almost always be done. Neither should architects, I think, be so very much afraid of varying the angle of the pitch of roofs in the same building for the sake of symmetry only, when leading conditions point out that it would be an advantage to have it otherwise. At the same time, liberty

must not become licence, irrespective of sound and lasting construction; and we must therefore induce a certain restraint in the consideration of the proper points of bearing, thrust, and support. The abominably ugly and wasteful roofs put up of late years are a disgrace to the generation, and especially so as the same amount of material and labour would, if properly used, have made them fitting and pleasing accessories to the general composition of which they form a part; but I suppose that in the "good old times" the architect was partly his own builder, and in some cases quite his own client, and that stocks and shares, and everything except pious contributions to the good work, were then unknown. Concrete and similar compositions may tend somewhat to modify the more ordinary and unpretending class of buildings, and perhaps take a more important place than it now does, in an architectural sense; but it has not yet stood the test of time, or other trials to which all kinds of buildings are more or less liable, and therefore it should be employed with due caution: for instance, it would not probably be the best material for a work required to withstand intense heat, although it might resist the weather for ages; and whilst it is well adapted to the formation of a level, strong, and inexpensive floor, it might not prove a good thing in connection with a lime or malt kiln, or even a baker's oven. Perhaps a good deal more may be done than has hitherto been by using concrete in combination with other materials, not only as grouting similar to what we see in old Roman works, but in courses and blocks forming important parts of a structure; but we must be content to move cautiously, testing every new invention as we go.

(To be continued.)

WATERFORD BRIDGE.

At a meeting of the citizens of Waterford, a deputation was appointed to confer with the directors of the Waterford and Limerick and the Waterford and Central Railway companies, with a view to the joint purchase of this bridge. We have spoken of this bridge on more than one occasion in these columns, and pointed out its present position and holding as an anomaly. It is the sole bridge which spans the Suir in the city, and tolls have been collected upon it since its erection. As an oak structure, it was built as far back as 1794 by a Mr. Cox, of Boston, U.S., architect, who also erected similar bridges at the same period in Ireland. This wooden structure should have long since been swept away, and its place supplied with a good stone or iron bridge. We hope to see soon another bridge spanning the Suir, and both made free to the citizens of Waterford for ever. The existence of tolls on a tidal river bridge in the heart of a populous town or city shows a great lack of public spirit.

THE CENSUS, COUNTY AND CITY OF DUBLIN.

We have received the second part of the Census Commissioners' Report for 1871, treating upon the county and city of Dublin. Last year we received the first report in relation to Carlow, and offered some suggestions with a view to the development of the industries of that county. The present report is valuable and instructive, and is, besides, of a very comprehensive character. We must defer until our next an examination and digest of its contents, with what other observations the nature of the various subjects treated of suggests. In the meantime we hope the Commissioners will expedite their work, as it is important that their first report will not have grown stale before their last is finished. Freshness, accuracy, and completeness, are matters to be desired in every census, and it is desirable that they should, for public reference, be completed as soon as possible after they have been taken.

"THE QUERIST."

BY GEORGE BERKELEY, BISHOP OF CLOYNE.

(With Notes by "Dubliniensis.")

"FIRST PUBLISHED A.D. MDCCXXXIV."

Whether the raising the value of a particular species will not tend to multiply such species, and lessen others in proportion thereto. And whether a much less quantity of cash in silver would not in reality enrich the nation more than a much greater in gold?

Whether, *ceteris paribus*, it be not true that the prices of things encrease as the quantity of money encreaseth, and are diminished? And whether by the quantity of money is not to be understood the amount of the denomination, all contracts being nominal for pounds, shillings and pence, and not for weights of gold or silver?

Whether our exports do not consist of such necessities as other countries cannot well be without? [Truly, now as well as a hundred and fifty years ago, but it is not by our exports, but by our imports, our poverty and dependence in many respects may be judged.]

Whether upon the circulation of a national bank, more land would not be tilled, more hands employed, and consequently more commodities exported?

Whether silver and small money be not that which circulates the quickest, and passeth through all hands on the road, in the markets, at the shops?

Whether all things considered, it would not be better for a kingdom that its cash consisted of half a million in small silver, than five times that sum in gold?

Whether there be not every day five hundred lesser payments made for one that required gold?

Whether Spain, where gold bears the highest value, be not the laziest, and China, where it bears the lowest, be not the most industrious country in the world? [Matters in respect to both countries are wonderfully revolutionized since Berkeley's day. Spain is neither so rich nor so lazy, and many other nations are now not only on a par, but are perhaps more industrious than the Chinese.]

Whether it be not evidently the interest of every state that its money should rather circulate than stagnate?

Whether the principal use of cash be not its ready passing from hand to hand, to answer common occasions of the common people, and whether common occasions of all sorts of people are not small ones?

Whether business at fairs and markets is not often at a stand and often hindered, even though the seller hath his commodities at hand and the purchaser his gold, yet for want of change? [Before the uprise of the modern banking system, Ireland suffered to an incredible extent for "want of change" at fairs and markets.]

As wealth is really power, and coin a ticket conveying power, whether those tickets which are the fittest for that use ought not to be preferred?

Whether those tickets which singly transfer small shares of power, and being multiplied large shares, are not fitter for common use than those which singly transfer large shares?

Whether the public is not more benefited by a shilling that circulates than a pound that lies dead?

Whether sixpence twice paid be not as good as a shilling once paid? [Much better when it is a matter of several hundreds or thousands of sixpences, and when it may be said to represent small profits and quick returns.]

Whether the same shilling circulating in a village may not supply one man with bread, another with stockings, a third with a knife, a fourth with paper, a fifth with nails, and so answer many wants which must otherwise have remained unsatisfied?

Whether facilitating and quickening the circulation of power to supply wants be not the promoting of wealth and industry among

the lower people? And whether upon this the wealth of the great doth not depend?

Whether without the proper means of circulation, it be not vain to hope for thriving manufacturers and a busy people?

Whether four pounds in small cash may not circulate and enliven an Irish market which many four pound pieces would permit to stagnate? [In 1735 the currency of Ireland was in a miserable state, and trade was sorely crippled for want of a handy circulating coin. The country abounded with large gold coins of Portugal, which were greatly overrated, and, as a consequence, flowed in from all parts. The readers of Swift's works know also how the country suffered from "Wood's halfpence" and the coinage of other private speculators who procured government patronage for their base issue.]

Whether a man that could move nothing less than a hundred pound weight would not be much at a loss to supply his wants, and whether it would not be better for him to be less strong and more active?

Whether the national body can be in a state of health and vigour without a due circulation of the extremities, even in the fingers and toes? And whether the political body any more than the national can thrive without a proportionable circulation through the minutest and most inconsiderable parts thereof.

If we had a mint for coining only shillings and sixpences and copper money, whether the nation would not soon feel the good effects thereof? [An exclusive Irish mint at the present day might be found to confer a benefit.]

Whether the greater wastes by wearing of small coins would not be abundantly overbalanced by their usefulness? [The decimal system would be found more useful than the present if it was once successfully used; and its use and nature should be taught in all our schools as a beginning or stepping-stone to its future establishment.]

Whether it be not the industry of common people that feeds the State, and whether it be possible to keep this industry alive without small money?

Whether the want of this be not a great bar to our employing the people in these manufactures which are open to us, and do not interfere with Great Britain? [This bar no longer exists, but the great want is the want of enterprise, notwithstanding our vast undeveloped resources, mineral and otherwise.]

Whether, therefore, such want doth not drive men into the lazy way of employing land under sheep walk? [In this respect now as formerly the landed proprietary are to blame. The consolidation of small farms has driven the cultivators of the soil out of the country, and it will be found eventually that a country converted into a mere sheep walk will always remain a miserable country. A fair proportion of tillage and manufactures alone can give a nation prosperity.]

Whether the running of wool from Ireland can so effectually be prevented as by encouraging other business and manufactures among our people?

Whatever commodities Great Britain importeth which we might supply, whether it be not her real interest to import them from us rather than from other people?

Whether the apprehensions of many among us (who for that reason stick to their wool), that England may hereafter prohibit, limit, or discourage our linen trade, when it had been once with great pains and expense introduced and settled in this land, be not groundless and unjust? [In the seventeenth and eighteenth century Ireland had experienced some of the jealousy in the sister kingdom; and, as a burnt child dreads the fire, our people in Berkeley's time and long after could be well excused for having an apprehension of danger.]

Whether it is possible for this country, which had neither mines of gold nor a free trade, to support for any time the sending out of specie? [The minerals existed,

though the free trade did not; but now we have some mines which are as valuable as gold and a free trade to boot, yet our position is nowise enviable. Our imports and exports after all are subject to a heavy weight of taxation in one shape or another, while modern national and more particularly local government has created an enormous burden in the shape of rates and taxes with no commensurate advantages.]

Whether in fact our payments are not made by bills? And whether our foreign credit doth not depend on our domestic industry, and our bills on that credit?

Whether in order to mend it we ought not first to know the peculiar wretchedness of our state? And whether there be any knowing of this but by comparison?

Whether there are not single market towns in England that turn more money in buying and selling than whole counties (perhaps provinces) with us? [At the present day their are towns in the sister kingdom that do more business on some single days than the whole province of Connaught in the same time.]

Whether the small town of Birmingham alone doth not on an average circulate every week one way or another to the value of fifty thousand pounds; but whether the same may not be often paid. [Birmingham is no longer a small town, and the fifty thousand pounds of Berkeley's day might safely be multiplied several times at present. Dublin, and Ireland in general, is a good customer at present of both Sheffield and Birmingham, and the majority of the articles we import could be produced in a few years at home if the spirit of enterprise was rife among our people.]

Whether any kingdom in Europe be so good a customer at Bourdeaux as Ireland? [Irish merchants during the eighteenth and nineteenth century were the best importers of Bourdeaux goods, eatables and drinkables, but the days of fox hunting and pistolling are not what they were. The confraternity of the "Blasters" and the "Hell Fire Club" are long extinct, and though it may be agreeable to slay a fox before breakfast, the "winging" of a man is no longer looked upon as an accomplishment in the land of saints. Though there is little blood spilt there is not a little wine yet drunk, but Bourdeaux no longer enjoys a monopoly.]

Whether the police and economy of France be not governed by wise councils, and whether any one from this country who sees their towns and manufactures and commerce will not wonder what our senators have been doing? [We cannot say much as to the wisdom of French councils for the last few years, and at the present hour the position of France is not enviable. The French, however, are a wonderfully recuperative race, and may shortly recover from their late sad reverses, and possibly be as powerful and as prosperous as ever.]

What variety and number of excellent manufactures are to be met with throughout the whole kingdom of France?

Whether there are not everywhere some or other mills for many uses—forges and furnaces for iron works, looms for tapestry, glass houses, and so forth?

What quantities of paper, stockings, hats, what manufactures of wool, silk, linen, hemp, leather, wax, earthen ware, brass, lead, tin, &c.? [And several dozen more, the growth of modern invention and exigencies.]

Whether the manufactures and commerce of the single town of Lyons do not amount to a greater value than all the manufactures and all the trade of this kingdom taken together? [Yes, at the period when Berkeley wrote it did.]

Whether in the anniversary fair at the small town of Beaucair upon the Rhine there be as much money laid out as the current cash of this kingdom amounts to? [This and the preceding query show what a low state the trade of Ireland must have been in in 1735.]

Whether the very shreds shorn from woolen cloth which are thrown away in Ireland

do not make a beautiful tapestry in France? [Connected still with some of our manufactures there is a great waste of material which could be profitably utilised in the manufacture of useful articles: it would be tedious to enumerate them all by name.]

Whether there be not French towns subsisted merely by making pins? [Yes, and at present there are several foreign towns subsisted by making less valuable articles—articles not of utility but of folly and vanity, —and Ireland is a heavy purchaser.]

Whether the coarse fingers of those very women—those same peasants who one part of the year till the ground and dress the vineyards—are not another employed in making the finest French point? [To a small extent, since Berkeley's time, some of our Irish peasant women have earned a reputation and some profit by Irish point or Limerick lace, but unfortunately the indigenous "point" of this island has been "praties and point."]

Whether there is not a great number of idle fingers among the wives and daughters of our peasants? [Yes, and among the sons and daughters of our citizens at the present hour.]

Whether the French do not raise a trade from saffron, dyeing drugs, and the like products, which may do with us as well as them? [The raw material for many dyes has always existed in this country; and, though at one time somewhat developed, of late years our dyes and colouring stuffs have been obtained from abroad.]

Whether we may not have materials of our own growth to supply all manufactures as well as France, except silk; and whether the bulk of what silk ever France manufactures be not imported?

Whether it be possible for this country to grow rich so long as what is made by domestic industry is spent in foreign luxury? [If the one-fourth of the money which is expended by the inhabitants of this country in articles of foreign luxury, in wearing apparel, house furnishing, and animal appetites, were kept at home, domestic industry could be stimulated to such a degree that there would not be a more prosperous island under the sun. Every new toy must be bought to please the baby, every new pattern must be secured for the mother and daughter, and the father and son follow the bad suit very often in another preposterous fashion. The proverb has it that "a fool and his money is easily parted," and in many ways this nation has cultivated folly to the top of its bent.]

(To be continued.)

AN ANSWER FOR THE CRITICS.

OUR contemporary the *Broad Arrow* waxes humorous and practical, and talks in a sensible way. The knack of reviewing is a modern accomplishment, and it often begins on the book cover and ends on the title-page or the book of contents. There are *Sharp and Flat Gazettes* in every field, and the medical and architectural field of journalism has its representatives also. The man who can dose the public to-day with an article on malt, molasses, congon, and cutlery, will dispense his opinions on architecture to-morrow. Unless he performs his self-appointed task, as the *Broad Arrow* has it, by smelling the 103rd page, or some other page, and gains inspiration thereby, we do not know by what other process these *soi-disant* scribes perform their duty. But let us hear the *Broad Arrow*—

"It is rather a joke to review a magazine's wrapper, yet that is all we are going to do, for the proprietors of the *Practical Magazine* have sent us nothing else. To be practical, therefore, ourselves, we will admit that nine-tenths of literary criticism could be as satisfactorily conducted by a view of a book's binding as it is now that a thick volume octavo, 'with the publisher's compliments,' is the usual method of making known its merits to the press. Your critic, *pur sang*, eyes the cover, smells the 103rd page, shows the pictures to his little girl, notices that the 'selling price is 16s.,' that *Longway* is publisher, and proceeds to decide the fate of the venture, so far as his paper, the

Sharp and Flat Gazette, is concerned. If strictly conscientious, he says, 'Mary, just dress up a trifle for this (half a column), you'll find something about it in the *Athenæum*, and I'll stick in a tag.' But Mary cannot string quotations when there is nothing to quote from, nor plagiarise the *Athenæum* when the oracles have remained dumb. Mary is not sufficiently 'practical' to make something out of nothing; so she will, we venture to say, quote the prospectus of the proprietors, and make her father's half-column of manuscript with great ease. Now, all the world will know soon enough about the proprietors' prospectus, so we will quote but little from its contents. The *Practical Magazine* will, after the 1st of January, 1873, be practical enough, we venture to say, to speak for itself. So we think, and so we hope, for, on the first blush, it is an honest and earnest attempt to meet a great and palpable want. This is smelling the 103rd page with a vengeance, some orthodox critic may say; but we hold to our view. First impressions go a great way; and the moment we tore open the package which contained the lilac cover of the *Practical Magazine*, and caught the notion of Luke Limmer's vigorous and appropriate design, straightway we said, confidentially (being alone), 'This will be a great success.'

"When we see the first number, we shall be able to speak further; meanwhile, we have cut out the portraits of Wedgwood, Watt, Arkwright, Stevenson, Pugin, and Bessemer, and preserve them as excellent likenesses of six truly practical men, well worthy to be displayed prominently, as they are, on the front of the new industrial organ."

THE LATE MAJOR KNOX, D.L.

SINCE our last issue, Irish journalism has lost a representative, in the person of the proprietor and founder of the *Irish Times*. As an energetic newspaper owner and employer he has been for several years well known, but in the ranks of literature his labours call for no particular notice. His politics and those of his journal underwent many changes in opinion and fortune, and in a worldly point of view he deserved success, having striven hard to obtain it. We are not called upon to pronounce a eulogium upon his character. We have differed as journalists with him betimes, but we are not of those who continually quarrelled with his principles or proceedings, and sought every opportunity of reviling him. Some of those persons have penned their insincere regret, and have pretended to discover after death that good which they never credited with an existence during life. *De mortuis nil nisi bonum* is a very handy maxim to act in accordance with, but with us it has little force; for if we conscientiously believed a man was bad during his lifetime, his death would not alter our opinion of him or the injurious effect his actions might have produced, and which survive the individual. We regret the sudden and premature demise of Major Knox, as an employer and a citizen, at a comparatively early age, believing that if he had lived he would have performed useful service to the country.

THE LATE MR. W. DEANE, ARCHITECT AND ARTIST.

THIS clever, well-known, and much-respected architect died at his residence in London on the 18th ult. Of late years his labours were confined more to art subjects than to architecture proper. From choice and want of sufficient encouragement he abandoned architecture as a profession in favour of art. His ability in the former was, however, marked and recognized, but the recognition was not of that nature that could assure a living, much less success. Early in his career he obtained prizes from the Institute of Architects, and travelled afterwards, with a view to following his profession, in France, Italy, and Germany. His name is associated with a few public works in London. In 1862 he was elected an associate, and in 1863 a member, of the Institute of Painters in Water Colours. He exhibited some of his works at the exhibitions of the Royal Academy and the Dudley Gallery. In London his de-

mise is much regretted by all those who have known him through a number of years. Born in 1825, he has died at the comparatively early age of forty-eight, leaving behind him an honoured name and some works which will not be forgotten.

IMPROVEMENTS IN STREET ARCHITECTURE.

WITHIN the past twelve months we have with pleasure witnessed the progress of improvements in the houses in South King-street, between the southern corner of Grafton-street and the "Gaiety" Theatre. Some have been entirely rebuilt, whilst the majority have been remodelled for business purposes. Amongst the latter is No. 51, and which forms the subject of our notice. A handsome shop front, with large window filled with polished plate glass, in the modern "gin-palace" style, has superseded that of the dingy old-fashioned "public" of days gone by. The front is composed of pilasters with caps and bases, the end ones having consoles over of new design, with wood finials on same; showboard, cornice, and blocking, having cast-iron cresting fixed thereon. The internal fittings are of a chaste and ornate character, and in every respect adapted for the carrying on of the wine and spirit trade. The building works were executed by Mr. John Bogan of Dorset-street; the decorative by Mr. Entwistle, York-street; all from the designs, &c., of Mr. W. Walpole Campbell, Rathmines.

A NUT FOR "FIGARO."

"We may here notice some other people who bestow their attention on *Figaro*, and whom we may style the clippers. These are the newspaper sub-editors who clip extracts from our journal, with which to enliven and diversify the contents of their own papers."—*Figaro*, January 25th, 1873.

LOOK

ON THIS. We cannot avoid mentioning one instance bearing us out in what we have written above. Out of the critiques upon last Saturday evening's concert which appeared in the morning journals of Monday, but one writer was aware that Middle. Macvitz did not sing the song announced for her in the programme, consequently the other four wisacres praised the song she did not sing! One only was able to inform the public as to the title of the song she sang, which was a cavatina by Mercadante, and which was most exquisitely rendered by her.—*Irish Builder*, Jan. 16.

AND ON THIS. Musical criticism in Dublin appears to be in a very bad state. Out of five critiques which appeared upon Middle. Macvitz, last week, but one writer was aware that the lady did not sing the song set down for her, and the other four wiseacres actually praised the song she did not sing. It is said that only one Dublin paper has a *bona fide* musical dramatic or fine art critic upon its staff: the critiques in other journals being supplied by ordinary penny-a-liners.—*Figaro*, Jan. 29.

MUSICA HIBERNICA.

A SERIES of lectures on Ancient Irish Music is now being delivered at our University by Sir Robert Stewart. These lectures ought to be attractive to Irishmen, and more particularly to our citizens, who have been credited with a love for music, which of late years, we fear, they have not sustained. Sometimes one would think that Bunting, Moore, Sir John Stevenson, Hudson, and more recent workers and auxiliaries, among whom is Sir Robert Stewart himself, have laboured in vain. It is a great measure rests with the metropolitan Press, by an honourable and educated criticism, whether Irish music, ancient and modern, will be again lifted from its region of eclipse into a region of light. We will only be too glad to render what humble assistance we can towards this most desirable end, and actuated alone by this animus, we will give publicity to every well-intentioned effort, no matter from what quarter it proceeds. In his first lecture, Sir Robert Stewart said that—

"The study of ancient Irish music laboured under this disadvantage, that archaeological *historians* were not often musical, and musicians very rarely felt any interest in archaeology. The origin of most nations being shrouded in fable, any attempt to trace the arts of poetry and music to their sources

must be futile. From very early times in Ireland there were traditions of a body of men who practised both these arts, and attained celebrity. Tradition, although a shadowy foundation to erect a theory upon, should not be wholly disregarded; in proof of which he might refer to two rather remarkable events connected with the ancient history of Ireland—one, the discovery in the year 1722 of ornaments of gold in the grave of an Irish hero, at Ballyshannon, as recorded in Camden's "Britannia"; the other, the discovery of the grave of the Connaught chief, Conon, in 1785, by a deputation from the recently-founded Royal Irish Academy. Both these places had been described so exactly in the records and in the songs of a bard, that the curiosity and interest of the learned were aroused, and the discoveries made accordingly. It would appear that events in the early history of Ireland had been truly recorded, but that the bards had generally erred in assigning to them an extravagantly remote antiquity. Thus, the long lists of Irish kings before the Incarnation were incredible. He would, however, refer to O'lamh Fodla (A.M. 3,000), the famous Irish lawgiver, and to Cormac (A.D. 254), a wise and good monarch, both of whom were unquestionably good and great men. The former had established the famous meetings at Teanor [Tara, eighteen miles from Dublin], where a gently sloping hill of a mile in extent was the site of the palace of Aden, or Amluin. When the island was converted A.D. 432, by St. Patrick to Christianity, the change was made without the bloodshed by which similar events had in other lands been signalized, and the chief bard of the heathen king—whose name (Dubh-thach) he (Sir R. Stewart) could but imperfectly pronounce—was one of the earliest converts to the faith of Christ. The sites of the ancient colleges of the bards were thenceforward occupied by those famous Christian schools at Armagh, Clonard, Ross, Lismore, Clonfert, Bangor, and many more seats of learning and religion which made Ireland famous as the 'Isle of Saints.' The name of the famous Finn MacComhal (pronounced Fin Macool), who lived when Cormac reigned, and his son Ossian, led to some details connected with the colonization of the western coast of Scotland, by that hero and his *finni*, or followers, and to the first musical illustrations of the lecture, consisting of two Ossianic melodies—one, 'The Battle of Ardnor,' sung by male voices; the other, a wild and very Scottish sounding air, sweetly sung by one of the children of the College Chapel choir, which Sir Robert Stewart said had been presented to him by Mr. Richard Ellis, of Abbeyfeale, in the county Limerick, whose family had received it from the wife of Macpherson himself, the translator, or inventor, or adopter, or romantic of so many Gaelic poems—poems which (whatever doubts may be entertained with respect to their authenticity) had, nevertheless, been highly prized by three of the greatest men of the present century—Napoleon I., Lord Byron, and Sir Walter Scott.

"The early colonization of Ireland by Phœnician voyagers 500 years before Christ was also alluded to by the lecturer, who remarked that the 'corachs,' or wicker boats covered with hides, the turfy soil, and other natural characteristics of this island, had been recorded by the Phœnicians. From them was derived that funeral song called *Caoine*—a term which he (Sir R.) would endeavour to pronounce in the correct Irish manner, rather in the throat. References to the *conclamatio* (*Æneid* 6th, iv.) of the women over the body of Dido, a Phœnician princess—of the mother of Euryalus, of the alternative weeping of the wife, mother, and sister of Hector, of David's lament over Saul and Jonathan, were made, as examples of the funeral songs of antiquity. The lecturer spoke of the invariable fidelity and truthfulness of Shakespeare's allusions, and instanced the dirge in the play of "Cymbeline," of which the scene is laid in Wales, where Guiderius and Arviragus pronounced the following, line by line, each responding to the other, while the chorus takes up the strain in the true bardic manner—

- (G) No exorciser harm thee.
(A) Nor no witchcraft charm thee.
(G) Ghosts unlaid forbear thee.
(A) Nothing ill come near thee.

All joining in—

Quiet consummation have,
Unremoved be thy grave.

[Not, as some editions had the line, 'Unrenowned,']

"These lines of Shakespeare, as set to music by Dr. Nares, a musician of the eighteenth century, were then sung by some of the musical scholars and the children of the chapel choir. The lecture was brought to a close by the singing of one of the *caoines*, of which the subject was a peasant mourning for his wife, and inquiring wherefore she left him—had she not sufficient to eat and wear—had she not friends, relatives, &c. The music consisted of a few bars of plaintive melody, sung with much taste by a young student with a charming alto

voice. This was followed by a choral refrain after each verse. The circumstance of the singers being concealed imparted a somewhat mysterious effect to the dirge in question, which Sir R. Stewart said he had heard in the county of Meath, many years ago, from a funeral procession, which was entering the burying-ground of the ancient Priory of St. John the Baptist at Trim—a ruin picturesquely situated, immediately adjoining the bridge over the river Boyne in that town."

SECOND LECTURE.

Sir Robert Stewart delivered his second lecture on last Saturday, and his third will be delivered this evening. The second lecture was numerously attended, and great enthusiasm manifested by the audience. The subject treated was the Irish Harp: it music and literature, ancient and modern. The third lecture will be devoted to the Irish Bagpipe.

We will continue in our next issue these lectures.

"A VISIT TO EPPS'S COCOA MANUFACTORY.—Through the kindness of Messrs Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*."—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or Milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cocoa, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs James Epps and Co., manufacturers of dietetic articles, at their works in the Fuston road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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VOL. XIV.—No. 316.

The Creed of the Sanitarian.

SANITARY WORK AND WORKERS.

ANITARY Science, like many other great truths, has had to contend with massive ignorance, gross prejudices, and innumerable and vexatious obstacles. Sanitary Reform proper, as we know it at present, dates back but a comparatively few years. Among the first opponents and most lukewarm supporters we now number some of its most zealous supporters. How, need we ask, has such a great and beneficial change been effected? Simply by preaching and reiterating, week after week and month after month, truths which are exemplified by observing the laws of health, and their violation; by tracing the courses of diseases to their root, in ill-cleansed cities, badly-constructed dwellings, defective drainage and sewerage, or water supply or its entire absence; by pointing out and exposing public and personal neglect; by illustrating frightful examples of the living and housing, and manners and habits of poor and rich, and their surroundings, in their homes and about their homes, in towns and cities, in streets and lanes; by analysing the food and drink of the people, and fearlessly exposing conscious and unconscious evil practices. By doing these and several similar acts the public health and individual health have been improved, reform has set in, and public legislation is at last supplementing the work of individual labourers who have acted for years the pioneers in this noble service. To preach, advocate, and practically assist in this great work, and to believe in its saving powers, is the Creed of the Sanitarian.

We do not claim for ourselves to be the first, or even amongst the first, in the field; but we do claim to have assisted earnestly and honestly in the movement of sanitary reform and legislation. For some years back we have never relinquished our pen in the interests of health; and while we retain sufficient nerve to hold a pen or express a thought, it shall be devoted to the same righteous purpose. While claiming for ourselves some small meed of merit, we will never deny to earlier labourers in the field the claims to which they are justly entitled. For many years our English contemporary the *Builder*, through its conductor and writers, but more particularly through its editor, has continually and consistently laboured in the interests of sanitary reform, and it is not too much to say that through its advocacy we owe in a great measure the improvements that have taken place in the sister kingdoms, the influence of which has worked or led to good effects on this side of the Channel. Sanitary associations have for some time existed in England, and the labours of the Social Science Association, now well known, cannot be ignored. Some of the daily London newspapers speak betimes on sanitary matters as if they were the prime movers and suggesters of improvements in the sanitary field.

Their advocacy is useful and needful, but they should not ignore the services of the early labourers in the cause, who led them and eventually forced them to make sanitary reform a national question.

We have now a Sanitary Association established in Dublin; and during the short time it has existed it has performed most useful service—a service which should have devolved upon the Corporation of this city;—a work which is, in fact, corporate work, and which ought to be faithfully performed by corporate authority. Within the last few days the Sanitary Association of this city has addressed a document to the Lord Mayor, aldermen, and burgesses of Dublin, calling attention to the sanitary state of the city, and pointing out the acts that are in force, and which can and ought to be applied by the Corporation in the interest of the public health. The association makes a number of practical suggestions, with a view to a speedy reform and re-organization of a staff of sanitary inspectors, and no exceptions can be taken to the programme they put forward for the information and assistance of the Corporate authorities.

We have ourselves over and over again suggested nearly every one of the matters recounted by the association, and a reference to our back volumes will prove the fact. How often have we not preached that the most of the diseases that occur in Dublin are easily preventible, being endemic and epidemic? We have asked for an efficient staff of inspectorship, and a daily and house-to-house inspection in our back streets and alleys. We have pointed out cases of defective drainage and sewerage and total want of it in many quarters; we have repeatedly directed attention to the state of the Liffey and its foul tributaries; we have pointed to the accumulations and deposits of filth that exist in several quarters of the city, some of which are retained by the very Corporation itself. Month after month we have written about the disgraceful state of the streets; and, what was not less important, we preached a crusade hot and heavy against vendors of diseased food, adulterated drinks, and dealers in light weights and measures, by which the poor are systematically plundered. Even the providing a convalescent home and hospital accommodation was not overlooked in these pages, for we suggested both auxiliary land or floating hospitals in the bay or on the sea coast. Our contemporary the *Builder* on several occasions also drew attention to the state of this city, and pointed out many of the above wants. It will be seen that we were not behindhand when the Sanitary Association entered the field, and that we in a measure anticipated all of their suggestions. Nevertheless, we will be only too glad to help on the association by giving its labours every publicity and doing its members strict justice in whatever it originates or accomplishes apart or in combination with other public bodies.

We earnestly hope that the Corporation will at last work in concert with the association, and that the Public Health Committee will reform itself or be reformed, so that a deep national disgrace shall be wiped out for ever.

The presence of respectable and intelligent professional men on the committee of the Sanitary Association offers well, and their counsel is worth listening to when they speak, as some of them have, earnestly and

wisely on the important subject of public health. There is no use in members of the Corporation going into details and pointing out what it has attempted or achieved. If its performances were placed beside its failures for the last ten years, what a frightful contrast would there not be exhibited. The small half-hearted and ill-performed work of past years will not bear an examination. The future must show what can be done and will be done, and if the local authority of this city neglect to engage in the necessary work that is absolutely required to be done, then woe betide this city and perhaps several of the homes of the members of the Corporation. Cholera may be in our midst before we are prepared; fever and small-pox have never deserted us; and the recurrence of a frightful epidemic is not among the possibilities but the probabilities of next summer. This city has been terribly scourged at different periods since 1882, and we have no hesitation in saying if the Corporate authorities had done their duty in 1849, and at later periods, and still more recently, hundreds of valuable lives would have been saved, and pauperism would have sensibly decreased.

In heaven's name let a good and earnest beginning be made, without any more cavilling or delay about acts or codification of acts: these will follow as a necessity. No act is illegal on the part of a member of society that succeeds in saving human life. When we act altogether in such a cause, our acts carry with them their own justification. Let Dublin be put in a proper sanitary condition, and its people saved from ravages worse than death. We have pointed out the remedies, prescribed them, dinned them into the ears of the nation and the people's rulers, but in their wilful deafness and mental blindness they heard not or pretended not to hear. Will they even listen now, at the eleventh hour? Will common sense replace folly and criminality, or will reason and righteousness reassert itself in this city? The gospel of health is contained in the laws of health, and whoever preaches it and applies its truths will save and be saved. Let prevention be our motto, and, acting in accordance, we will act up to the Creed of the Sanitarian.

THE BUILDING AND ORNAMENTAL STONES OF IRELAND.*

FOURTH NOTICE.

ORNAMENTAL STONES, ETC.

SHOULD Professor Hull at a future date bring out a larger and improved edition of his already useful and valuable work, it would not be amiss for him to treat of other building materials besides stones. There are varieties of clays and painting earths, and clays for pettery and tiling purposes, or used in flooring, roofing, and for drainage and general sanitary and building uses, of which it would be most useful to have some correct and general account furnished. Then there are varieties of sands and gravel used in connection with building wants, foundry or casting sands, and gravels that may be and have been utilized in grouting and concrete work. Concerning these a few chapters might be usefully devoted to a work treating upon building stones, without at all interfering with the general design of the volume under notice.

* "A Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries." By Edward Hull, M.A., F.R.S. London: Macmillan and Co.

Resuming, we will now briefly pass under notice the principal varieties of ornamental stones common to this country. We believe we have before incidentally alluded to syenitic granite; but syenite *per se*, according to our authorities, is a crystalline granular aggregate of quartz, felspar, and hornblende, differing from granite only in the substitution of the last-named mineral for mica. There are foreign descriptions of syenite fit both for building and ornamental purposes, such as that of Nova Scotia, where it exists in connection with porphyry. Our Irish varieties occur at Carlingford and Slieve Croeb Mountain. A large-grained syenite or diorite, consisting of a crystalline granular aggregate of hornblende and felspar, is found at Loughrusmore. From an analysis of four varieties of the Donegal syenite by Dr. Haughton, the proportion of silica ranged from 49.2 to 58.06 per cent. In Carlingford Mountain a variety of anorthite syenite is found, containing anorthite, felspar, and hornblende.

Of porphyry we have in this country a fair share. A quartz porphyry (*i.e.*, elvanite) occurs at Wexford. Concerning the geological ages, Professor Hull writes:—"The highly silicated quartz porphyries and felspar porphyries have been chiefly developed amongst rocks of Primary or Palæozoic age, and are largely developed amongst the mountainous districts of the British Islands, formed of these rocks, such as Galway, Sligo, and Donegal, in the west and north of Ireland, and Wexford and Wicklow in the east, &c." The south of Ireland furnishes porphyries in the carboniferous system or basin, and here in Dublin a very handsome porphyry exists at Lambay Island, nearly equal in beauty to that kind termed "*verde antico*," used for decorative purposes on the Continent. "It consists of a dark green base in which numerous light green crystals of orthoclase felspar are distributed. This rock takes a fine polish. A large block has been placed for exhibition in the Museum of the College of Science, Dublin, and deserves the attention of architects and sculptors." We quite agree with Professor Hull in the latter view.

Speaking upwards of a century ago of Dublin porphyry, Dr. Rutty, in his "*Natural History of Dublin*," wrote:—"We find in several places in the neighbourhood of Dublin stone which nearly corresponds to the character of porphyry: particularly on the Hill of Howth are large rocks, white and red, shining like marble, and to a superficial view appearing like white and red marble, bearing a natural polish (as the red one did an artificial), but much harder than marble, for this stone cut an iron pestle when struck on it; nor did it bear the saw. It struck fire copiously with steel, and smelt sulphurous on collision. It made only a just sensible ebullition with vitriol, scarce any with spirit of salt or aquafortis. Kept ten hours in a pipemaker's furnace, it was not softened, but hardened, and still struck fire with steel." On Ireland's Eye Rutty found more stones like the above, having a natural polish, and "breaking opaque and purple, and of several colours." There is very little doubt that Howth and the adjacent island (Ireland's Eye) contains similar porphyry to that of Lambay, which is not many miles distant. Although we cannot compete, as far as our present knowledge extends, with the foreign varieties of porphyry, including the famous "*roseo antico*" of the Egyptians, yet our

porphyries are of sufficient beauty to be utilized largely for ornamental purposes, and that, too, with effect.

Without a polish, porphyry is undesirable to use, as its beauty is hidden; and it is not to be recommended for general building purposes in masses, as its colour gives a dull and heavy appearance, whether it be of a dull purple, green, or red colour. Polishing of porphyry is also rather costly. For displayed panelling, or for a relief in buildings of limestone or ordinary freestone, it will afford a good contrast. For road-metalling, from their hardness, the common kinds will be found a valuable material.

The various greenstones, except in a few localities, are not generally used for building or ornamental purposes; yet diorite, diabese, minette, &c., will be found to have special qualities that ought not to be overlooked. Diorite is a very hard stone, and, as such, in a rough way suited for road material. In Ireland, as well as in England and Wales, we have a quantity. In the County of Mayo a peculiar class of rocks occur, composed of orthoclase, felspar, augite, and chlorite, but differing from diabese, according to Professor Hull, "in the species of the constituent felspar." Another description occurs in some hills near Swineford, in which magnetite is present. Minette is to be found among the silurian rocks of Wicklow, Cavan, Monaghan, and Down, and near Louisburgh, County Mayo. With such good road-metalling as these greenstone rocks afford, it is strange that material should be imported from Wales.

Of the augitic rocks—basalt, dolerite, and melaphyre—the north of Ireland affords a quantity. The region of the County Antrim develops the basaltic plateau. Basalts and dolerites are of three general divisions, and their occurrence is, first, as vertical dykes; secondly, as sheets or beds intruded among older rocks; and, thirdly, as tabular sheets spread over the surface, and form horizontal or inclined beds, "often interstratified with volcanic ashes, agglomerates, and bands of boles." These beds are referable to the Tertiary period; but Professor Hull is of opinion that the north and east of Ireland have basaltic dykes of much older date.

The two divisions of these augite rocks, either as vertical dykes or tabular sheets, are observable in the County Antrim. The Giant's Causeway affords a splendid example of basaltic and dolerite rocks, probably the grandest in the three kingdoms. A crystalline dolerite is to be seen at Fair Head; and at Scrabo Hill, County Down, a similar hypersthenic dolerite, in which the augitic mineral is replaced by hypersthene.

Stones that come under the description of lavas, though used abroad for building purposes from very early times, do not call for much notice in respect to this island. Basalt and dolerite, already alluded to, are partly of plutonic and partly of volcanic origin; but the special kinds which come under the terms of trachyte and phonolite (*i.e.*, clinkstone), the latter is believed to be rarely the product of volcanic eruption. Of trachyte, we have an approach to it in what is called "trachyte porphyry" of the counties Down and Antrim, wherein there are crystals or grains of free quartz or sanidine. Lava is imported to Great Britain from the Continent, and is worked into millstones. It has been extensively used for building and paving purposes in Italy. The streets of Pompeii were laid down in polygonal blocks of this material, and also

the ancient and remarkable corn-mills formed in the manner of a double egg-cup rotating on a conical pedestal, and turned by hand-spikes. These are indeed objects of the curious ancient workmanship of Pompeii, and they put us in mind of the ancient corn-mills or querns of Ireland.

For decorative or ornamental purposes serpentine in its varieties affords a most beautiful material, but unfortunately it is not well suited for decorative uses in the humid and smoky atmosphere of British towns and cities. It takes a fine polish, and is well suited for vases, pedestals, pilasters, inlaid slabs or panelling for walls, or slender columns. There are three descriptions—the "precious or noble serpentine," of a rich green colour; the "common serpentine"; and, thirdly, the "fibrous serpentine." The English and Welch variety is in much repute, particularly that of Lizard, Cornwall. The "Connemara marble" of Ireland is serpentine, and is used much of late years as an ornamental stone. A beautiful and highly-prized variety, "due to transmutation from dolomite limestone," is to be had in this island also. There are speckled or mottled varieties also. The principal quarries of this serpentine marble are at Lissaugher Hill, Reccass, Ballynahinch, and at Streamstown, between Clifden and Letterfrack. Specimens of these may be seen in the galleries and halls of the Royal College of Science, Dublin. The Connemara marble or serpentine may also be seen in columns that support the hall. Donegal also yields serpentines of a foliated green description, with bands of calcite or dolomite, and a denser olive-green variety. Specimens of this latter kind may be seen in the Museum of Trinity College. Sligo affords a deep leek-green colour, and serpentine with garnet rock is to be found at Aughadovey.

Alabaster or gypsum is a valuable material, and has been used in very early times for similar purposes as it is at present. In the middle of the last century large quantities were brought from Mullikartan, near Lisburn, and sold in Dublin. In respect to this variety of gypsum, we will quote an extract from Dr. Rutty's work, published in Dublin in 1772:—"It runs in long white strise parallel to each other. It makes excellent plaster, bubbling and boiling up in the pot over the fire as the plaster of Paris, and, accordingly, is used in stucco work, in which it is found to be excellent, and even superior to that which comes from France, being not liable to crack as that, and gives a cement much more durable under water, as George Sempill, architect, assured me." Our author meant George Semple, the architect of Essex Bridge. We are of opinion, from what Semple has written in his work "*On Building in Water*," and his Diary anent the re-building of Essex Bridge attached, that he used large quantities of Lisburn gypsum in the grouting and concrete foundations of that structure. (See his work.) Gypsum, in Professor Hull's work, is described as a hydrous sulphate of lime, consisting, in a pure state, of lime 82.66; sulphuric acid, 46.51; water, 20.98. Gypsum is to be had in several districts in this island. At Carrickfergus it is found in connection with rock-salt in the keuper marl of the Triassic formation; at Carrickmacross, County Monaghan, it is thickly deposited; and it is again found on the banks of Lough Allen, County Leitrim. A polished slab of the County Monaghan variety is to be seen in the Museum of the College of Science, Dublin.

The French gypsum or plaster of Paris is in more repute in the British Islands, because of its hardness; but let not people fondly imagine that all the plaster of Paris in the market is obtained from the Paris deposit of gypsum at Montmartre or Pantin. It is stated that the aggregate annual consumption of gypsum in England is estimated at 80,000 tons, valued at £10,000, the largest quantities being used in the Staffordshire potteries, where it is used to form moulds of plaster: hence it is called potter's stone.—(*Descrip. Guide, Mus. Prac. Geology.*) North of Ireland gypsum was sold largely in Dublin formerly by druggists for scouring silver.

In some of the cathedrals and several of the old parish churches of the sister kingdom ornamental tombs and statuary are to be seen, but in this country there are very few specimens remaining of alabaster ornamentation. There possibly may have existed many such tombs and other ornamentation in alabaster in this island before the general destruction that overtook our beautiful old abbeys, churches, &c., in the reigns of Henry VIII, Cromwell, and previous. Inferior in durability and beauty, and also in value to various marbles, yet gypsum is valuable for art purposes and has been and is used for making copies of works. Gypsum plaster may be hardened, and coloured to imitate marbles, and present a successful imitation, but an imitation only.

Of the rarer kinds of ornamental stones, several localities in Ireland furnish some good specimens. In relation to the County Dublin, Dr. Rutty describes some, and in other of our local histories some scant particulars may be found. Professor Hull treats of a few of the principal to be found in the British Islands, as well as in foreign countries. Fluor-spar is a handsome ornamental stone, and occurs of various colours—purple, blue, green, yellow, lilac, and (rarely) red. The chief sources in the British Islands are Derbyshire, and it is found in connection with the carboniferous limestone. When cut and polished it shows a series of banded lines of varying shades. It is worked into vases, cups, obelisks, and numerous ornaments. It is known from its chief source in England as "Derbyshire spar." It occurs also in some districts of Scotland, and in the mines of Cornwall. In Ireland the Glendalough mines afford specimens of fluor-spar. A fluoric acid is produced from the stone, which is used for etching purposes on glass, and it is also used as a flux for metallic ores. In preparing fluor-spar for ornamental uses it is turned in a lathe; fine steel tools, coarse stone, and pumice and emery are used. Objects of art manufactured from fluor-spar are to be seen in the Museum of Practical Geology, South Kensington, and in the British Museum. Speaking of the spars peculiar to Dublin, Rutty writes in the last century:—"Varieties of this body—some pelucid, others white, some yellowish, some tinged with green spots, some brown, some rhomboidal, others shoot into crystals like nitre—occurred in several quarries about the lead mines and on the shores of this county."

Of rock crystal, Professor Hull writes:—"In treating on rock crystals we feel we are on the boundary which separates the precious from the ornamental stones; and it is questionable with which of these divisions it ought to be classified, as it in some measure partakes of the character of both." Rock crystal, according to our author, is the transparent colourless and crystalline form of pure quartz. It is of extreme hardness, and is worked into numerous ornaments for the person. It is used for lenses for spectacles, and of late years it has been used as a setting for bog-oak bracelets and necklaces. In this country it has got the name of the "Irish diamond." Rock crystal is obtained in plenty in Wicklow, Finglen mountains, and in Killarney. Rutty mentions having met several varieties of the Kerry stone or rock crystal in the County Dublin. At Loughashinny, he says, it was called in his day rock crystal, and was of hexagonal and other figures. He found it also at a lead mine opened at Castleknock

and in a quarry at Raheny, and hexagonal and octangular in a ploughed field at Rob's Walls (Malahide). It is interesting to notice that a trade in manufacturing these rock crystals into ornamental uses existed early in the last century, although the trade gradually died out afterwards. A revival, however, we are happy to say, has taken place of late years in this country, but not to a very great extent. In the eighteenth century crystals were formed into sleeve buttons, seals, covers for snuff-boxes, set in rings and buckles, and have been sold for real gems. "The crystal (writes Rutty) accidentally tinged with green is sold under the name of the occidental emerald, and most of the topazes worn in rings are, according to my author, Dr. Hill, of this kind." Dr. Hill, however, in his "History of Fossils," though a standard authority in the last century, is not a certain guide at the present day. Smith, in his History of the County Kerry, mentions the amethyst occurring in that county; and in an account of the Giant's Causeway, published in the Philosophical Transactions of the last century, among the stone found a certain rough pebble is mentioned "which, when polished, proved to be a white cornelian."

In the beginning of this century a fossil was unearthed from a quarry of black building stone or calp at Dunsink, in Dublin, of which the following description is given in a note in "Observations on Mr. Archer's Statistical Survey of the County of Dublin," a work issued under the auspices of the Dublin Society in 1802. The fossil was described "under the denomination of a spar, to the character of which it in nowise answered, but is of a far superior hardness and brightness, being a thin incrustation consisting of minute flaky bodies strictly adhering to one another and to the subjacent stone, of a bright white like silver, but more glittering, and is used as an ornament in buttons, ear-rings, and snuff-boxes. There is indeed a sparry, opaque, matter interspersed, but the brilliant parts strike fire plentifully with steel, emit a sulphurous flame in burning, and leave a dark red powder, so that it appears to be a mark-site." This fossil was no more nor less than one of our native crystals, and it occurs in limestone formations as well as in other stone. Rock crystal occurs in an imperfect state of crystallization amongst the quartz porphyries of Galway, Donegal, and Mourne. In the granite of the Mourne mountains, Professor Hull states it is well developed (as smoke quartz) in cavities along with topaz and beryl. Jasper occurs in large boulders or pebbles among the conglomerates of the Mweelrea Mountain in the west of Ireland and along the shores of Wexford. It differs from agate in being mostly opaque.

There are several other precious or ornamental stones of which we have yet no account as to their occurrence in this island, although they may possibly exist. Rutty, however, describes some of our ornamental stones under the term of bastard gems, and gives also some account of the petrifications common to the County Dublin—vegetable and animal petrifications,—but we will reserve a notice of these for a future paper.

We intended to have closed these papers for the present with some account of other ornamental and building materials not treated in the work before us, and which exist in our midst scarcely thought of no more than utilised. We will, however, pass them under notice probably in our next issue, so that our countrymen may know the boundless building resources of this island, and, if interested, avail themselves of them.

LONDONDERRY R. C. CATHEDRAL.

On former occasions we have given some particulars of the progress of the works at the cathedral, which has been upwards of twenty-two years in hands, and is not yet entirely completed. We illustrated the handsome pulpit of this edifice in last number. The *Londonderry Journal* of the 3rd inst. furnishes a long description, running to the length of

nearly five columns, in which much is said that is useful and something more which was unnecessary. It is not requisite that we should on the present occasion dilate upon matters already described, so we will briefly give a few particulars, dimensions, and fittings.

The extreme length of the church is 244 ft. by 81 ft. wide. The outer walls are 8 ft. in thickness; inside length, 217 ft.; breadth, 75 ft.; height of roof to outer ridge, 96 ft. The roof is Gothic, panelled; the walls are chiefly of freestone. The clear-story is pierced by thirty-six Gothic windows with granite facings. The aisles are lighted by eight side and two end windows. The outer walls are supported by eight buttresses capped with granite. The principal entrance is at base of spire; the door forms one large arch, divided into two of smaller size. The front is entirely of granite. The spire, when complete, will be about 280 ft.—at present it reaches to 102 ft. It stands upon sixteen octagon columns, each 8 ft. in diameter. The shafts are of Scotch freestone, with Corinthian capitals. The pillars are 14 ft. apart. The entablature of the edifice is supported by a number of figures in granite projecting from architraves. The nave is 160 ft. in length and 85 in breadth. The seats, numbering sixty-eight, are arranged at both sides, and are of stained pine. The passage in centre of nave is tiled with common brick tiles of two colours; the floor under the seats is boarded. It is stated the nave would accommodate from 1,200 to 1,500 persons. The aisles are 15 ft. wide by 160 ft. in length; they are lighted by ten windows. The chancel is richly ornamented, and is separated from other parts of the church by a railing of Caen stone 8 ft. in height. The railing is carved and supported by groups of marble pillars, and ornamented branches of iron are introduced between, forming a series of arches. The chancel floor is of Portland stone; the floor of the side chapels is decorated with mosaic tiling of small design. The high altar, which is the principal attraction, is composed of Caen stone, Irish red and green, and Sicilian marbles. We have not space to go into details respecting the designs and workmanship of the high altar, tabernacle and throne, reredos, or the altars of the Blessed Virgin and Blessed Sacrament, and the several figures. These last two altars are composed of Caen stone, Irish and Sicilian marbles. The communion rails are also composed of the same materials. The baptismal font, as well as the pulpit (described in our last issue), are the work of Messrs. Earley and Powells. It is octangular on plan, with eight marble shafts and richly-carved capitals. On each side the bowl of the font is carved with crockets, flowers, and finials. As a work it is a fitting counterpart of the other work this firm has executed.

The organ of the cathedral is the work of Messrs. Telford of Dublin, and is worthy of their house; its cost was about £900. It was put up under the direction of Mr. Fitzpatrick, an organ builder in the service of the firm. The gas-fittings and ornamental branches were supplied by Messrs. M'Laughlin and M'Oullough, of Derry, and we believe their work has given satisfaction. The cost of the altars, including the chancel rail and pulpit, is put down at £1,800. The cost of the gas-fittings, about £400; and the cost of the entire building is estimated at £28,000.

The architect of the work is Mr. J. J. M'Carthy, R.H.A.; the superintendent, Mr. Charles Whelan; the local builder who supplied the seats and put up the organ-gallery, Mr. Robert Maxwell. The general building work of the church has been carried on for some years by the system of "day's work."

En passant, there is another Catholic cathedral in course of erection in this country, which is now being carried on by day's work, although it was commenced and proceeded for some considerable time in the hands of a contractor.

NOTES ON THE ECCLESIASTICAL
ARCHITECTURE OF IRELAND.BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

SCATTERED through the south and west of Ireland, as also through the midland counties, are many churches and portions of churches, exhibiting details of the Romanesque style, too numerous to describe and illustrate in a work like this. I cannot, however, pass from this section of the subject without noticing a few of the most important.

KILMALCHEDAR.

This interesting church is situated in the parish of the same name, in the barony of Corcaguiney, and County Kerry; it stands not far from the strand of Smerwick Harbour, in the extreme west of the peninsula, and under the shadow of the great mountain of Brandon, in a cemetery evidently of hoar antiquity. The name of this church has puzzled some of our antiquaries, and many ingenious explanations of it have been given. Mr. Marcus Keane thus describes it:—"One of the most interesting ruins of the (so-called) Norman style in Ireland is Temple Melchedar (*alias* the Temple of the Golden Molach), in the wilds of Kerry, at the extreme west of Ireland."—(*Towers and Temples of Ancient Ireland*, p. 265.) It is, however, quite evident to the Irish scholar that the name signifies the Cell or Church of Mael-Chedair. Now the only information we possess respecting this ancient worthy is to be found in the *Martyrology of Donegal*, p. 127; but it is very decisive and satisfactory as far as it goes:—"A.D. 636.—Maolcethair, son of Ronain, son of the King of Uladh, of Cill Melchedair, near the shore of the sea to the west of Brandon Hill. He was of the race of Fiatach Finn, Monarch of Erin." Here is a true history nearly thirteen centuries old, for the above is a record of a death. Maol-Cethair came to the shores of the western ocean, to the most westerly land, not only of Ireland, but of Europe, and here erected his cell or oratory, and commenced his work of evangelizing a people who perhaps up to that period had not received the gospel.

We have reason to believe that his original oratory is still in existence close by the present church; it has been described by me in the section on "Primitive Churches," and has all the characteristics of the age I would ascribe to it. It is probable that between the oratory and the edifice I am about to describe there was a church of an intermediate type, that has disappeared. It is scarcely probable that local taste could have suddenly sprung from the severe unornamented style of the primitive cell to the ornate edifice under consideration.

The church consists of a nave and chancel. The nave is in length 27 ft., and in breadth 17 ft., in clear of walls, which are 8 ft. thick at the gables and 8 ft. 3 in. at the flanks. The masonry is of a very superior class of rubble work, the stones mostly squared and well fitted, with very few spawls; in some parts it approaches the character of ashlar work. The walls are nearly perfect on the flanks; they are about 14 ft. high from the original level of the ground, and 32 ft. 6 in. to the apex of the western gable. The flank walls are prolonged at the east and west ends, as usual in our early churches, and form antæ 1 ft. 9 in. on the face, and 10 in. projection; they are neatly built, of squared ashlar blocks, and originally appear to have been continued up the gables, as in many of our stone-roofed primitive churches. The pitch of the present gable appears to have been altered; the original one is apparent for a height of about 4 ft.; from that upwards it is much flatter; it was crowned at the west end by a curiously-shaped cross, a portion of which remains.

That this building was stone-roofed there can be no question, as portions of it, for a height of from 8 ft. to 5 ft. from the eaves, exist both in nave and chancel; it was constructed of rectangular flat-bedded blocks of stone, neatly dressed, and laid breaking joint.

The doorway was in the west end, and is 8 ft. 2 in. wide at sill, and 2 ft. 11 in. at head; it has on each side two orders of jamb-shafts, with plain caps and curiously-moulded bases, over which are two orders of arches, enriched with chevrons; the whole is surmounted by a bold label consisting of a square and chamfer, the latter bearing a line of semi-balls; the terminations are dogs' heads, and there is a human mask at the apex. The arched head is filled by a plain stone slab, upon the inside face of which is carved a bull's head, in bold relief, the original block being sunk to obtain it. Along the eaves runs a bold eave-course, consisting of a square and chamfer, supported at the quoins by grotesque heads.

The flank walls of the nave, internally, are divided into a series of sunk panels divided by semi-columns, having scalloped capitals and moulded bases, which rest upon a sole and a projecting string-course 8 ft. from the original level of the floor; these panels are six at a side.

The chancel-arch is but 5 ft. 2 in. wide. The piers were square to a height of 8 ft. 6 in. from the original ground level; from thence to the spring of the arch they were enriched with short pillars having scalloped caps and curiously-moulded bases. It has two orders of arches—the outer, a bold torus moulding edged with a circle of discs; the inner is carved on the front and back in chevrons, having lozenge-shaped soffit panels filled with flowers. From the appearance of the jambs of this arch it would seem that, previous to the erection of the present chancel, a recess existed for the altar, as in the chancel of Cormac's Chapel. The inside jambs at each side have the remains of semicircular-headed sunk panels, neatly built, and the foundation of the east wall of the recess is still to be found, shewing that the apse was about 3 ft. 6 in. deep.

The nave was lighted, if I may use the expression, by two window-opes, one in each flank wall, towards the east end. Externally they are 8 in. wide at the sill, sloping to 7 in. at the spring of arch, and are 1 ft. 11 in. high, built of neatly-worked ashlar, the head being cut out of one block. Internally they splay to an opening of 2 ft. 4 in., and are neatly lined and arched with ashlar.

The chancel is evidently an addition; its masonry, though excellent, is somewhat inferior to that of the nave. It has no antæ on the eastern quoins, and its window-opes have not the sloping jambs of the early periods. It was, however, stone-roofed, and its details shew that it was erected previous to the thirteenth century. Its dimensions are 16 ft. 4 in. by 11 ft. 4 in., clear of walls, which are 2 ft. 9 in. thick on the flanks, and 2 ft. 6 in. at the gable. It was lighted by two opes—one in the east wall, 8 in. wide in clear of ope, and 4 ft. 11 in. high, with vertical jambs and semicircular head, cut out of one stone. The external reveal has a square and chamfer; it is widely splayed inside, and the jambs and arch neatly built of ashlar work. The other ope was in the south wall, close to the east end; its external lining has disappeared, but the internal jambs and arch shew that it was of similar character to the east. This portion of the church was also stone-roofed; a chamfered cornice and string upon each flank wall marks the springing of the roof, of which some feet are in existence. It had also a chamfered eave-course externally.

Within and around the church are to be found a number of grave-slabs, inscribed with crosses and ornaments of a most primitive type, and bearing inscriptions in characters perhaps the most ancient in these islands. I am not now alluding to the Ogham, of which there is here also a very remarkable monument, inscribed on two angles. A valuable monograph of this church has been published by Mr. Arthur Hill, architect, of Cork, most elaborate in its details and accurate in its drawings and measurements. The plan and section given on plate are reduced from his engravings. There is no history attached to this church, and we have no clue

to its date; the nave was probably built in the middle of the eleventh century, and the chancel in the twelfth.

I have been thus minute in describing this beautiful little church, which, when fresh from the builders' hands, was an admirable piece of work. Its stones are now worn and weather-stained, its carvings eaten away by the frosts and Atlantic storms of seven centuries, but the professional eye can see that, when its last scaffold was struck, it was a piece of craft of which its masons may have been proud.

Surely the Gaedhil must have made a very remarkable progress in civilization and the arts of civilized life when, in this remote district, craftsmen could be found to design and execute such a work. They were the successors of the men who built the great primeval fortresses of Staigue, Ballycarberry, and Caherdaniel; of the stone-walled cashels and stone-roofed dwellings so numerous in the same district; and, at a later period, of the stone-roofed oratories of Gallarus and Kilmalkedar.

FRESHFORD.

Freshford (sometimes called Aghour; anciently Achad-Ur, *i.e.*, Fresh-Field) is a parish in the barony of Cranagh, and County of Kilkenny. A religious establishment was founded here by St. Lachtain late in the sixth or early in the seventh century, as we find his death recorded by the *Four Masters* thus:—"The Age of Christ, 622.—. . . . St. Lachtain, son of Torben, Abbot of Achadh-Ur, died on the 10th (*recte* 19th) of March." In the *Felire Aengus* and in *O'Clery's Calendar* his festival is given at the 19th of March; the notice in the latter is as follows:—"Lachtain, son of Torben, Abbot of Achadh-Ur in Ossory, and of Bealach Feabhra, A.D. 622." According to Colgan (19th March), he was a native of Muskerry, in the County of Cork, and erected a church at Bealach-Feabhra. Dr. O'Donovan, in a note at this date, states that Bealach-Feabhra "is probably the place now called Ballagharay, or Ballyhawry, a townland situate to the west of the parish of Kibolane, barony of Orbhraige, or Orrery, and County of Cork." It is stated by Archdal that he was also a bishop.

Excepting the short life in Colgan, we have no information respecting this ancient worthy. His establishment appears to have flourished after him, as we find in the *Annals of the Four Masters*, at A.D. 809, the death of "Boelgaile of Achadh-Ur"; and, at A.D. 899, the death of "Ceannfaeladh, son of Cormac, Airchinneach of Achadh-Ur"; and, at A.D. 1018, the violent death of "O'Brodubhain, Abbot of Achadh-Ur." These are all the historic references that I have been able to find respecting this place. But though the records of the life and ministry of St. Lachtain are scant and few, he has left his memory after him. He was evidently held in much repute in his day. There is a celebrated fountain near Cashel, called Lios-na-sciath, which is dedicated to him (see Archdal's *Monas. Hiber.*). We find that he was the patron of Lialaghtin, in the County Kerry, where he had a church, and where we find the remains of a Franciscan friary, erected in 1464 by O'Connor Kerry. We also find a holy well of great repute near Aghabullog, in the County Cork, named Tubber-Lachtain, where his memory is held in great veneration.

The only remains at present existing at Freshford is the parish church, a small structure, the fabric of which is of some antiquity, but so altered and repaired that no original feature remains excepting a beautiful and elaborate porch in the west gable, remarkable for its Irish inscription recording the name of its builder and of the patron who caused it to be built. This porch is deeply recessed; the external order is a broad square member, carved on the face and soffit with a curious flat ornament often found in ancient manuscripts; the front face has a human head for a key-stone, the ends of the soffits terminating in grotesque heads,

which rest on the capitals. This member is supported by two columns at each side, each pair under a cap common to both. They are carved with human heads and lizards, the abacus composed of a square and deep hollow with the ball ornament, and a bold fillet; the shafts have moulded bases, which rest upon a continuous plinth. The abacus appears to have been continued across the gable as a string-course. The next order is also a square member carved with chevrons on the faces and soffit, and resting upon one pillar at each side, which have capitals similar to those already described, excepting that the bells are scalloped, and the bases are enriched with carving. The third order is of similar character to the last, both in its arch and pillars. The doorway is revealed, and has square jambs which slightly slope; it is semicircular-headed, and around the external face of its arch is an inscription in the Irish character and language. The external order of the porch was crowned by an effective label, consisting of a fillet and hollow, filled with the ball ornament; outside of the terminations of which are two square panels—that on the left shewing a man on horse, and that on the right two figures in the act of embracing, both very much worn and indistinct. There was a high-pitched gable over this porch, some traces of the lower parts of which remain; the upper part of this wall having been rebuilt, the rest has disappeared. This porch is a very beautiful object, almost classical in the symmetry and chasteness of its details. There is an admirable drawing of it in Dr. Petrie's valuable work, at p. 282, who, in his usual critical and admirable manner, gives the following account of the inscriptions over the doorway:—

"This inscription is contained in two bands, encircling the external face of the inner arch,—the letters, as is usual in all inscriptions, being indented,—and is as follows:

"1. In the lower band:

'OR DO NEIM IGIN UIURO ACUS DO MATHGAMAIN
U CHIARNEIC LAS IN DERNAD I TEMPULSA.'

i.e., 'A PRAYER FOR NIAM DAUGHTER OF CORC,
AND FOR MATHGAMAIN O CHIARNEIC, BY
WHOM WAS MADE THIS CHURCH.'

"2. In the upper band:

'OR DO GILLE MOCHOLMOC U CECUCAI DO RIGNI.'

i.e., 'A PRAYER FOR GILLE MOCHOLMOC O' CENCUCAIN WHO MADE IT.'

"It is to be regretted that neither our annals nor genealogical books preserve the names of any of the persons recorded in this inscription, so that it is impossible to determine exactly the period at which they flourished; but it is obvious, from the surnames applied to the three individuals concerned, that they could not have lived earlier than the eleventh century, when the use of hereditary surnames was generally established in Ireland. And that the Mathghamhain, or Mahon, O'Ciarmaic, whose name is here inscribed, was a chieftain of the district, might be naturally inferred from the inscription itself, even if no other historical evidence existed; but this inference is rendered certain by a passage in the *Book of Lecan*, fol. 96, b., in which we find a Leinster family of this name mentioned as one of the six tribes descended from Fergus Luscan, who was the son of Cathaoir Mor, Monarch of Ireland in the second century, and the ancestor of almost all the distinguished chieftain families of Leinster. It appears, moreover, from the following passage in the *Annals of the Four Masters*, at the year 1087, that a Conall O'Ciarmaic was then a chief of some distinction in the Leinster army:—A.D. 1087.—The battle of Rath Edair [was fought] between the Lagenians and the men of Munster, in which the victory was gained by Muirheartach O'Brien and the men of Munster over the Lagenians, and over the son of Domhnall, son of Maol na m-bo (King of Leinster), and over Diarmaid O'Brien, and Enda, son of Diarmaid, and a great slaughter was therein made of the Lagenians, together with the son of Murchadh O'Domhnaill, lord of Hy-Drone and

Conall O'Ciarmaic, and O'Neil of Magh-da-chon, and others.'

"I may also remark that the name O'Ciarmaic is still numerous in the County of Kilkenny, though usually metamorphosed into the English name Kirby by those speaking English. The name of the female in this inscription is probably that of the wife of Mathghamhain, or Mahon, as it was the custom anciently in Ireland, and indeed still is to some extent, for married women to retain their paternal names. An instance of this usage is also found in an inscription on the tomb of Maeleachlainn O'Kelly, in the Abbey of Knockmoy, in which inscription his wife is called by her maiden name Finola, the daughter of O'Conor. Of the name O'Cuire, which is now anglicised Quirk, there were two chieftain families in Ireland, as appears from the *Book of Lecan*, fol. 105, b., and fol. 115, b.,—one seated in the territory of Fothart Airbreach, in Leinster, and the other in Muscraige Chuire, now the barony of Clanwilliam, in the County of Tipperary; but it would be idle to conjecture to which of these families this Lady Niam belonged.

"Of the third name—which is undoubtedly an Irish one—it is only necessary to remark that it was clearly that of the architect. It may not have belonged to the district, as professional men of that description exercised their art wherever they found employment; and that many of them were of distinguished celebrity in their day is sufficiently proved from records of their deaths which have found place in the authentic Irish annals."—(Petrie; *Round Towers*, pp. 283, 4.)

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood is a good number, and contains the continuation of the late Lord Lytton's entertaining contribution, "The Parisians." There is also a tribute to the memory of the deceased novelist in this month's issue. The other papers worthy of note are "Explorations," "Our State and Prospects," "The Bengal Ryot,"—all articles of merit.

Macmillan has some very instructive papers. This magazine is generally good, whether it entertains merely, or informs. The articles worthy of perusal are "The Children of the Poor," "Thoughts upon Government," "Instinct"—a paper well worth attention,—"Passages in the Life of a Bachelor." The paper on "Pope Piu the Second" will please a class of readers if it fails to please the general body.

Tinsley endeavours to create an interest by Irish sketches betimes—some successful, some failures. Its general matter in stories is good. Among the articles of this month of interest are its continued stories—"A Pair of Blue Eyes," "London's Heart," "Home, Sweet Home"—a tale. The Irish story is entitled "Paddy Callaghan's Mare"; it will amuse, of course, and create a laugh at the expense of "Paddy."

London Society contains a fair quantity, and in variety. The leading serial of "A Simpleton" is not of a very high class. The Rev. F. Arnold discourses on "Our Philosophers," in which "Grote on Aristotle" is reviewed. The remaining papers—"The Queen's Cadet," by James Grant; "No Intentions," by Florence Marryat; and "Talk of the Town," are the other papers of average merit.

Frazer has several excellent papers. The opening article on "The Dominion of Canada" will create an interest, as many subjects touching the government and the administration of the law are argued forcibly by the writer, Mr. Cyril Graham. There is a good sketch of our late deceased novelist, Charles Lever, worthy of notice. "Jagannath and his Worship," "Montalembert," "The Original Prophet," "Guns and Armour," are the remaining articles of merit.

Belgravia is up to the mark in this month's issue. Mr. Sala is still hammering away at his "Imaginary London," and playing leap-frog in a variety of ways with his subject.

He has a style of his own; but, after all, it seems to be made up with a bit of everybody's style. George Augustus, however, must be allowed to act up to his character, and play his antics with language original and select. Miss Braddon continues her novel, "Strangers and Pilgrims." The other noteworthy papers are "Experiences with Detectives," "In a Country House," "The Forest Chase," and the new opening story of "Only a Card." There is some poetry, but it is not of the best.

The *Gentleman's* furnishes a variety of matter, a number of the papers being good. The serial story of "Stranger than Fiction" proceeds well. "The Oberland in January," by Mr. Williams, will entertain. "The Republican Impeachment," arising out of Mr. Bradlaugh's paper, is continued in an article by John Baker Hopkins. There is an article on "The Irish Press" by Mr. O'Donnell, which will inform and amuse. Mr. Alfred Percival Graves, who has already written some commendable poetry on Irish subjects, supplies this month a stupid ballad or rhyme on the "Connaught Man," but he has utterly failed both in language and humour to depict the true characteristics of our countrymen in the West of Ireland. The ballad is too much like the slang songs of our music and concert halls, which are written to ridicule instead of to interpret the humour of our countrymen. There are a few more papers worth reading in this month's issue, and, with one or two exceptions, the magazine as a whole is a good number.

Temple Bar, along with its serial story by Mr. Wilkie Collins—"The New Magdalen," contains also another story by Mrs. Edwards—"A Vagabond Heroine," and a smart but somewhat laboured critique on the poetry of Robert Browning, as illustrated in "Fifine at the Fair." It is noticeable the tendency there exists to catch at striking names for new stories or other subjects in these days. Saints, sinners, apostles, disciples, beggars, thieves, criminals, fools, madmen, idiots, and a thousand and one other folk are pressed into service for heroes and heroines. It is not a healthy spirit. *Temple Bar* is not, however, the "odd man" or only journal that allows writers to transform, transfigure, and disfigure our literature by disallowable names and subjects. This month's issue contains some good papers, and in addition to those already mentioned we may note "The Baron in England," and "America and her Literature."

St. James's gives the usual monthly instalment of "The Cravens of Cravenscroft," which continues well. "The Adventures of Three Englishmen and Three Russians in South Africa" is also continued this month, and is full of romance. There are two or three other stories, and a paper on "Gastronomy" which promises to be interesting.

The *Argosy* contains a "Crisis in Life," by Johnny Ludlow; "What our Advertisement Brought," "Two Days in the Life of the Late Emperor," and the new serial story by the editor—"The Master of Greylands." The *Argosy* is a good number, and all its articles are generally readable.

St. Pauls furnishes a few excellent articles. Mr. Holbeach contributes a paper on "Mr. Darwin's Expression in Man and Animals," which is worth reading. Then we have Mr. Horner's "Great Fairs and Markets of Europe." Mr. James Greenwood contributes a paper on "Penny Awfuls." The writer ought to know something about these penny sensational magazines in London, having himself contributed to some of them, or ones very little removed from them. "The Amateur Casual" of the *Pall Mall Gazette*, i.e., Mr. Greenwood, can do a little of the "dreadful and awful" himself wherever and whenever it pays. He is clever withal, though he is to be found among the "Bohemians."

Cornhill has a fair share of matter, but its principal attraction is in its serial story by the editor, which has been going on for some months—"Old Kensington" sustains its early promise. Of current matters the article on "The Agricultural Labourer" will please

some readers, but the picture is rather charming in some of its aspects that real life seldom furnishes.

The *Fortnightly Review*, *Transatlantic*, and *Colburn's New Monthly* are all good, but we have not space for detailed notices this month.

FINE ARTS.

"THE IRISH HOUSE OF COMMONS IN 1790."

A WORK has been painted by Mr. Henry Barraud, and is now on view in London, representing "The Irish House of Commons in 1790." Those amongst our Irish readers who have been fortunate enough to have seen the painting of the interior of the Irish House of Commons painted by Francis Wheatley, and still in the possession of the Grattan family, will be reminded by a view of Mr. Barraud's painting. Wheatley's great Irish painting represents a scene in the Irish House of Parliament in its palmiest days, when the house and galleries were full of wisdom, wit, and beauty, at the period when Grattan was moving the Declaration of Rights. There is a subsequent painting by Wheatley representing a meeting of the Volunteers of 1782 in College-green, of which engraved copies may be picked up now and again in the city, but they are getting very scarce.

Returning to Mr. Barraud's painting, we may say that, like his previous effort, he delights in painting crowds or a number of faces. The principal figures are painted from authentic copies. We have the Speaker, John Foster, Grattan, Flood, Curran, and others. John Philpot Curran is represented as a small man in black, addressing the house. The hall is crowded, and the galleries show a splendid array of beauty and fashion of the day—ladies, countesses, peeresses, marchionesses, &c. Mr. Barraud has kept pretty strictly to the spirit of the period in his picture, and reproduced the costumes and sights as they existed at the close of the last century. We have little doubt but the painting, when engraved, will find many purchasers among the English as well as the Irish nobility and gentry, as a memorial of stirring times and olden memories. The painting is an ambitious one, and will elicit criticism, and can bear it without injuring its worth.

THE COACHMAKERS AND TECHNICAL EDUCATION.

THE City Companies or ancient trade guilds of London are at last beginning to move, and to recognise the anomalous position which they have held for a long series of years. By moving and acting with celerity and effect, they will probably save their bodies from being reformed by some sweeping Government measure. They have the means, by their possession of wealthy and important trusts not properly exercised, to make their bodies not only generally but particularly useful in the spirit of their being. The Coachmakers and Harnessmakers Company are now following the good suit of the Turners, Plasterers, and other guilds, and have offered the following prizes for competition among persons of the trade of coach-making, being masters, foremen, workmen or apprentices, viz., for freehand or mechanical drawing applicable to carriages, or parts of carriages, or the ornamentation thereof—1st prize, the company's silver medal and £3; and 2nd prize, the medal and £2; and for practical mechanical—1st prize, the silver medal; and 2nd prize, the bronze medal, each prize being accompanied by the company's certificate. The awards will be made by the Science and Art Department,

South Kensington, at the examinations held throughout the country. The company offer, in addition, three prizes, given by Mr. Holmes, the master, for drawing of carriages, or parts of carriages, to the scale of one inch to the foot. The freedom of the city and of the company will be presented to such successful candidate as the judges may recommend to the court as having distinguished himself sufficiently to entitle him to such an honour, upon his satisfying the court as to his general moral character. The drawings for competition are to be sent to the Company's Hall, in Noble-street, before the end of next month, so that the prizes may be awarded upon the 1st of May, and the best drawings exhibited in the International Exhibition. The judges are the masters and wardens and three past masters.

We are of opinion that the students of the Dublin Society Art School, who are apprentices to the above trade are entitled to compete, as the Dublin School is in connection with the South Kensington Department. The judges of the drawing, we think, should include one or more practical coach and harness-maker. Cannot Dublin do something in this competition? This city has been celebrated in days past for its admirable work in the above line, dating back to the days of the famous Colliers of Kevin-street in the last century—a firm which, we believe, is represented by successors in Messrs. Hutton and Son of Summer-hill.

OBITUARY.

THE LATE J. SHERIDAN LEFANU.

SINCE our last issue Ireland has lost another racy novelist, for many years well known in English as well as Irish literary circles. He was a member of the Irish Bar, and contributed to the *Dublin University Magazine* and other Irish and English publications. He was also for some time proprietor of the above magazine, and chief editor and proprietor of the *Warder* newspaper. Of late years he relinquished all active connection with the newspaper press, and devoted his time to the production of some very successful novels. Mr. Le Fanu was the son of the Dean of Emly, a dignitary of the Irish Church, and brother to William Le Fanu, Commissioner of Public Works. At his death the late novelist was in his fifty-eighth year.

All the old compeers and colleagues who worked together on magazines and newspapers during the past thirty years in this city are disappearing, and soon we will have scarcely one left. The *Dublin University Magazine* possesses memories that are bright, though the fate of the magazine itself is a wayward one of late years. It still lives; but men who, like Le Fanu and Lever, helped to preserve its fame as well as its name, are gone from us.

J. Sheridan Le Fanu deserves a fitting memoir and tribute to his memory, and we hope that some of his old companions of the pen will supply it on an early occasion.

ARCHITECTURAL DETAILS IN COMMON USE.*

(Concluded from page 41.)

REFERRING again to the roof in relation to the ordinary modes of covering it. One reason, probably, for the apparent desire to hide it may be that to most people it appears very flat and tame, especially when slates are used. If that is the true reason I rather respect it, as I think the way is open to remove the objection—at least in a great measure—by the combination of materials from different localities, choosing, of course,

such as are most suitable to go together; and it may be possible to use two of quite different characters with a little management, as, for instance, slates with tiles or rough glass in bands or patterns, but of course sparingly. Something of this kind might tend to improve the appearance of the roof without the expense incurred for such as minute dormers, finials, crestings, miniature railings, &c. I fancy that the customary one-quarter pitch of roof is much too little for this climate, and that in a style where a very steep one would be inadmissible, a much greater pitch than that would be an advantage, and with a little care and forethought it might be made to harmonise with almost any of the severer styles; and, whilst being more satisfactory in appearance, neither waste of material nor space need occur in its adoption. In fact, if a roof, which from its nature would exclude a parapet, could invariably take a more prominent place, I think a great step in the right direction would have been made. In all ordinary buildings parapets should be avoided as much as possible, for I cannot perceive that they are necessary, except perhaps in some few isolated cases; generally they would appear to be only serviceable as a protection during the rather too frequent visits of the plumber or other workman to that description of roof. If height to the front or elsewhere is wanted, it should be obtained in a more legitimate way than by carrying up a piece of the wall—in short, the roof should really appear what it is, or rather ought to be, a covering for the whole work between it and the sky.

There are many unnecessary and expensive things in every style and order which I think may be omitted with general advantage and without prejudice to the main points of the composition, for a refinement of parts to such an extent as sometimes to be lost sight of altogether, from the fact of their position being necessarily too remote, cannot conduce to the end in view; but, whether in that case or not, such details as label mouldings, a repetition of moulded strings, too great an elaboration of base courses and plinths, and sometimes even the cornice itself, are amongst the number that may, under many circumstances, be dispensed with, giving more consideration to well-balanced proportion, grouping, and outline of such portions as cannot be omitted from the nature of the general arrangement of the plan, and this with a careful use of the materials at hand, will seldom fail to produce the most satisfactory results. But perhaps someone will say that this tends to the "churchwarden style;" however that may be, my view of the subject is to avoid meanness as much as prodigality in design and attempts at display, probably produced by Portland cement, rough stucco, plaster casts, and "machine-made" mouldings, &c., at so much per hundred lineal feet, superficial yards, or by the gross, as the case may be.

Do not use ornamental details—I was about to say indiscriminately, or solely because the several kinds may have been found to be beautiful or very appropriate in this or that building, but rather take calmly into consideration the varied circumstances and requirements of your work as they naturally occur, when, supposing that you have arrived at a just conclusion as to what will best suit those circumstances, show as plainly as you can a reasonable cause for the mode of treatment adopted in every part of the work.

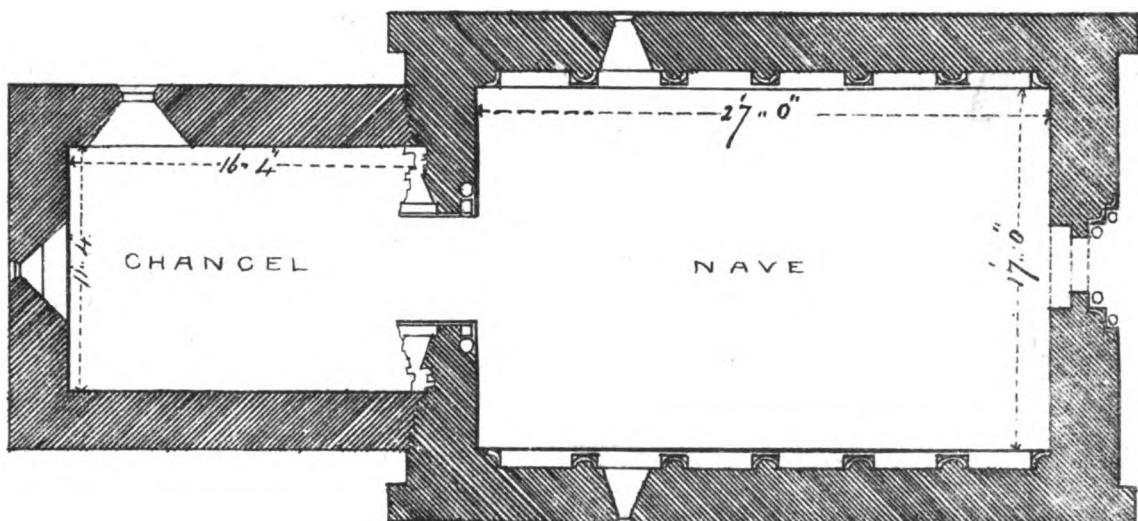
In the use of sculptured work, is it not objectionable to observe a good thing done too much? Some object from nature has perhaps been lovingly worked out by the carver (sometimes to the surprise of the architect himself), and forthwith its effect is spirited away, or at least depreciated, by too great a repetition, overlooking the fact that a single object or mere point of beauty in the right place will never weary or become common.

In our ordinary city houses, amongst other things capable of improvement may be mentioned the entrance door. The peculiar whims and fancies displayed in some are

* By Mr. E. Trevor Owen. Read at meeting of Architectural Association of Ireland January 30th, 1872.

KILMALKEDAR CHURCH

COUNTY KERRY

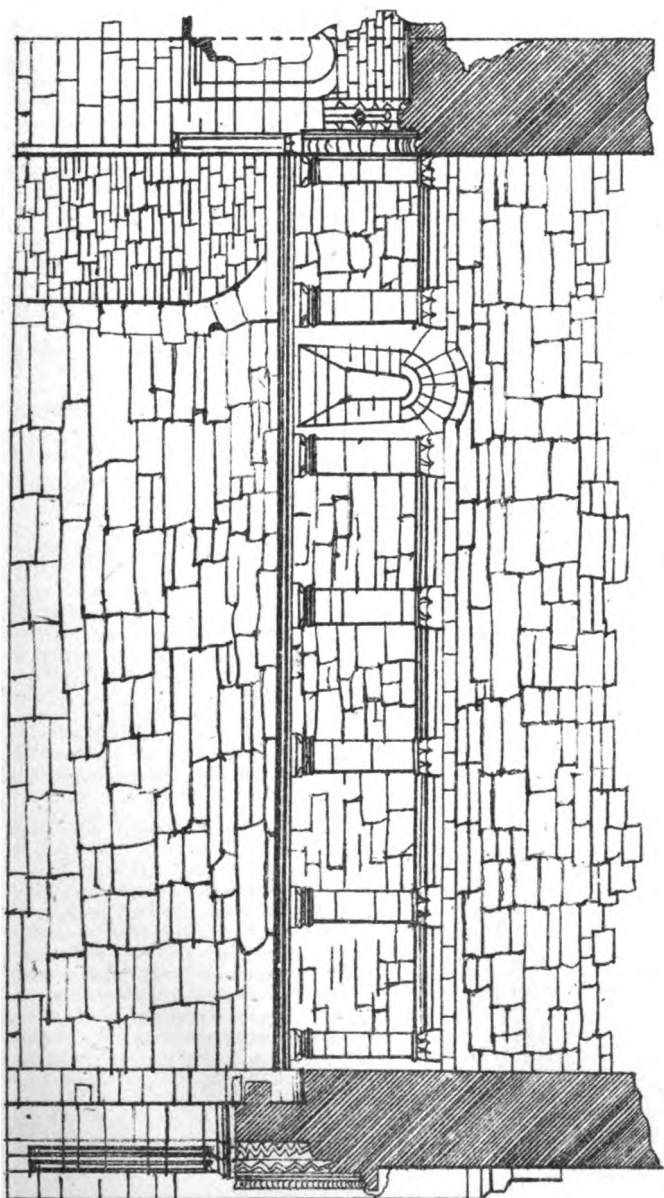


PLAN OF CHURCH

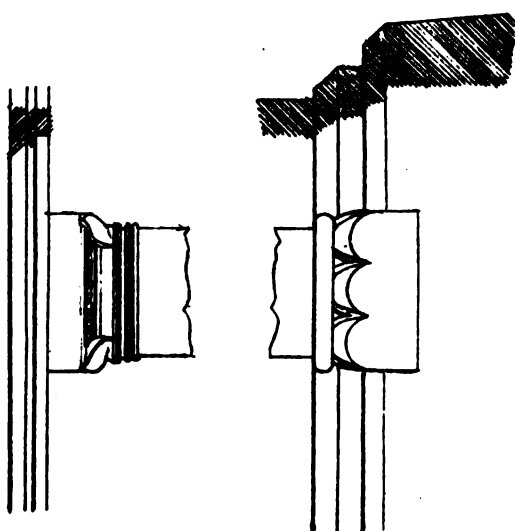
SCALE



KILMALKEDAR
COUNTY KERRY



SECTION OF NAVE



decided examples of what to avoid. Of course we have all more or less respect for what is called "Classic," but not when so distorted and misplaced, though dignified by the name of portico, as in the case where an order is crammed under a semicircular arch forming the outward termination to an entrance-hall or lobby, from 8 ft. to 10 ft. wide, though composed of two unexceptionable columns with entablature to match, beautifully painted in imitation of what it is not, standing out from the plainest possible red brick, "tuck-pointed," and most likely "raddled" front, accompanied by inconsistently plain rectangular openings in wearisome square miles of such fronts by way of windows. Is not this a very faint but true picture of our present "street architecture"? and as we see it repeated from time to time, apparently to the entire satisfaction of all parties concerned, until at least two-thirds of our towns and cities are so disfigured, it becomes a somewhat serious consideration whether, after all, true and consistent work in common things will ever again be seen—that is, from the palace to the college; and if in some providential way it does partially appear, whether it will be appreciated generally. We may have tried hard to believe in the painted Venus of the late sculptor, Gibson, and not feel much regret at having failed to appreciate it (the paint, not the sculptured marble), because this bedecking and besmearing otherwise good work is in the same objectionable manner.

If we take into consideration the labour of skilled workmen in every branch connected with building, and the materials employed—frequently of a costly nature,—and the evident industry and perseverance expended in many very indifferent designs, and compare it with what might have been done had the same efforts been rightly directed, we should find that real extravagance had been indulged in, though quite unwittingly. Our plain duty would, therefore, appear to be the task of teaching, as much as in us lies, that right way whereby we shall not only disseminate the beautiful and true more widely, but, in so doing, save also our clients' pockets.

I had intended to have referred to many other details, including internal as well as external matters in common use, but with your permission I conclude for the present, with the hope that we shall be able to "hold fast to that which is good," and at the same time remember that we are each in a position, more or less, to leave our individual mark upon lasting monuments as plainly as our autograph.

SANITARY INSPECTION.

THE Inspection Sub-committee of the Sanitary Association reported thus a few days ago, a copy of which nuisances reported was furnished to the Public Health Committee of the Corporation:—

"2 New Lishurn-street.—Fatal case of fever registered. Foul air from the yard. Adjoining premises are in a bad sanitary state. 144 North King-street.—Ashpit full of filth; yard dirty. The yards and adjoining places have been in a chronic state of filth for the past eight years. 24 Thomas-court.—House is in a most dilapidated state, and extremely filthy; may be said to be unfit for habitation; ball in a disgusting state, and yard simply indescribable."

At a meeting of the Public Health Committee, held at the City Hall—Councillor Byrne in the chair—a letter was read from the Town Clerk, drawing attention to the memorial of the Sanitary Association, and the reception, on Wednesday, 5th instant, of the deputation of that body, and the resolutions then passed. The following order was made by the committee—viz., "That this committee heard with surprise on Wednesday last, at an interview between this Council and the members of the Sanitary Association, the statements made by Dr. Grimeslaw, that sanitary sergeants and constables acting under the orders of this committee had been guilty of partiality in the conduct of sanitary cases, in the following words, as reported in the *Freeman's Journal* of the 6th inst.—viz.:

"The association were not satisfied with the police inspection of these houses. They had found that certain influences seemed to have been brought to bear. Ex-members of the force were, as a rule, connected with these tenements, either as rent collectors or farmers of them to occupiers; and this circumstance, perhaps, accounts for the defect referred to."

"The committee take the earliest opportunity of placing on record their opinion that this representation is unfounded, and to state that during the many years in which this committee has been in operation no single instance has, to their knowledge, occurred in which any sergeants or members of the Metropolitan Police Force, acting under orders of this committee, have been guilty of neglect or of partiality in the discharge of the onerous duties with which they are charged, and which they have fulfilled to the satisfaction of this committee. That this resolution be forwarded for the information of the Commissioners of Police."

If the Corporation Committee or some of the members thereof cannot use better language than the above in correcting mistakes (if indeed there are any mistakes), they had better retire. The Sanitary Association has performed a good deal of useful work which should have been performed by the Corporation, and, instead of being thanked, they are represented to be telling falsehoods. If the members of the Sanitary Association ventilate falsehoods they are capable of doing worse. The Sanitary Association should be allowed credit for what it has done, and, if assisted, we think it is capable of doing good service to the city. It were to be wished that the Public Health Committee would do more and talk less; and, if it will talk, let the language be that of gentlemen and not "snobs."

CIVIC LYRICS.—No. XXXI.

A MODEL CORPORATION.

A Model Corporation once gained marvellous renown
In ruling, on a model plan, a very model town;
It taxed the poor man, who was clean in person and in shirt,
And gave him sewage in the water to wash out the dirt.

This Model Corporation met, and moved, and then adjourned,
But, finding none were satisfied, it back to talk returned.
Morning, noon, and night it talked, and rarely made a spurt
Until the streets ran fetlock high or ankle deep with dirt.

This Model Corporation had three model committees,
But what they did, or how they did it, these are mysteries.
They moped about and muddled and left the work to "subs,"
Who never got the credit, though they always got the "rubs."

Number 1 it ruled the roost and strutted "cock of the walk,"
And, though it did least of the work, it did most of the talk.
Number 2 was inclined to work, though addicted to gab.
While Number 3, last though not least, moved both ways like
[a crab.]

This Model Corporation still retains its great renown
In ruling, on a novel plan, this very model town.
Oh may it live to see its end (so that nobody's hurt),
And hear its "In Memoriam" sung in one long Dirge of Dirt.
CIVIS.

CORRESPONDENCE.

THE INSTITUTE OF IRISH ARCHITECTS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—In reply to "A Member from the First" and the Hon. Secretaries of the Architectural Association of Ireland, allow me to say I have laboured in many directions as zealously as they have, and for a greater number of years, to assist in the elevation of the architectural and building interests of Ireland. The publication of my name would not, perhaps, add any greater weight to my remarks, and I would not feel any charm in seeing my name in print. I have often written under my sign manual, and will likely do so on many occasions in future, but for the present it is unnecessary. I take no great exceptions to the letters published in your last, as on the whole I think they are fair, although they do not go far enough. I repeat again what I have already written, that with two associations there is not sufficient activity shewn in behalf of the architectural profession of this city or country. The young association is perhaps doing all that it feels capable of performing at present; but what, may I ask, is the Institute thinking about? As yet I have only read the president's opening address. I have been asked within the last fortnight whether the Institute was "dead, or dying, or dreaming," and I

confess I did not know how to answer the query I made some answer to my interrogator, but the answer neither satisfied him nor myself. May I ask publicly whether the Royal Institute of Architects is about to cease and give way to the younger association? Is it going to follow the example of the original Institute of 1839? Is there not sufficient *esprit de corps* among the members of the profession to keep it together, and make it worthy of their order and their country? It is indeed very discouraging and disheartening to see the lack of spirit that is exhibited in this country by architects, who betimes complain loudly of one another's faults and the lack of patronage. During the last two or three years, as far as a journal is a representative of architectural activity, no publication could have more earnestly worked in the interests of Irish architecture than the *IRISH BUILDER*, as its many useful articles have evidenced. I would almost venture to say that its good work and good will have not been reciprocated to the extent which it might. It has supported the cause through thick and thin, and, when both associations were silent, it shewed a most commendable activity. I am justified in saying this much on the part of the conductors of your journal. Had we no native publication of the kind, we would lament its want as a medium of expression and exchange of thought. If the Institute is alive or intended to live, let it forthwith shew some signs of life; but, whether alive or dead, let not the younger association relax its efforts or grow faint-hearted. What work it has already accomplished is little, but it is useful. The more it essays to do, the more it will find itself capable of performing. With the best wishes for its success and the uprise of the Irish architectural profession, I am, sir, yours, &c.,

AN ARCHITECTURAL ASSISTANT.

THE "CARPENTERS' ASYLUM."

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The letter in your last issue by "A Retired Clerk of Works" is well worthy of the serious attention of the carpenters' body, and should be answered by the leading members of that society. As an operative myself, I am sorry to say that the building trades of Dublin are at the foot of the ladder, and are likely to remain there so long as they neglect the great facilities for technical education, that now exist, not only in schools of art, but through the medium of useful and most excellent works on architectural and building matters which have been and are published for their use and instruction. Those who will not elevate themselves must injure their trade, and, as a consequence, injure architecture and the prosperity of their country.—Yours, &c.,

AN OPERATIVE CARPENTER.

TECHNICAL EDUCATION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The letters of "A Builder's Wife" and "A Retired Clerk of Works" in your last number touches a subject or subjects that ought to move our building artisans to action. But will they be moved?—that's the question. Here are people willing to assist them, but will they be assisted? I have my doubts, and I hope they will not exist long, for the credit of our city. The fact is, sir, there is too much selfishness and clannishness amongst our artisans, and whatever good spirit there exists amongst them is exerted in the wrong direction. It is not "let Ireland be served in Ireland," and let Irishmen assist one another—not at all. The Dubliner looks on the Belfast workman with suspicion, or on the Cork, Galway, or Wexford man, as the case may be, and these last reciprocate their suspicions in the same manner. Every county, barony, yea every town and village, prides itself as being superior to the rest, hence there is no unity of spirit among our workmen. It is most laughable and ridiculous to hear the workmen who are natives of one county boasting that the workmen of their district were always the superior mechanics. Genius, talent, or practical skill, sir, are confined to no particular province, city, or barony. They exist everywhere, though they may not exist to the same extent in one place as another; but this is to be accounted for by the industries that are present or absent. Until our operatives give up their foolish beliefs and antiquated notions, and open their eyes to the facts that are staring them in the face every other day, they will retrograde instead of progress. It is impossible for them to stand still. Nothing can stand still that has an existence; it either must grow worse or grow better. Hoping our operatives will take the advice tendered in your journal, and move to some useful purpose, I am, yours, &c.,

A BUILDER'S FOREMAN.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

POLLY-STREET.

We fail to recollect in what particular year in the early part of the present century we first traversed this part of the unknown city. In going out for our morning ramble a few days since we found that its southern end was greatly altered from what it was in our younger days. Musicsellers, printers, publishers, booksellers, musicians, artists, and others whose habits and sympathies lay in that direction and lived in that locality—of them all we found not even one "last rose of summer." All were faded and gone, and a race with Jewish propensities had taken their places. The houses that had a bright and gay look once are now dull and seedy, yea, as seedy as the garbs of some of the would-be customers who stand upon the flags evidently tortured with misgivings whether they should or should not turn their coats without changing their faith. The house-fronts on each side are all of a very dull red, and a few of them appear as if they were "wiggled down" during the last decade. The stones of the parapets are loose, the sashes rattle in the winter wind, and the human machines that keep sentry at the shop door shiver and shake like bodies that never grow warm. There is enough of leather and cloth on all sides, but nobody seems to have money. The articles seem cheap and handsome enough, but the coats are too dear, so the clothes on the backs of the lookers on and the walkers on must last another season. The stitch in time that saves nine must grow into nineteen, and "Cheap Jack" will have to vociferate until he grows hoarse, and the sight of the early primroses gives a promise of warmer weather. From the angle of the cross street downwards facing the churchyard railings, which was a dead wall in our early days, there are ware-rooms in front and workshops at back, and a little business seems to be going on. Vans are outside the door, and chair legs and table legs are a-packing upside down in number and variety. Coils of ropes are scattered about, but the greater number are ropes of straw for the clothing of the inanimate extremities of inanimate forms and to prevent almost inevitable friction and dinges. "Hallo there, Jack, here's a block off," cries a man with a greasy cap and a green baize apron. "Hold on, Bill," shouts another, "hang it, here's a castor off." "By Jingo," blurts out a third easy white-aproned mortal who believes that fair and easy goes far in the day, "here are two knobs dropped out from the drawer of this dressing-table. Go in for the apprentice and tell him to bring out the glue pot quick, a screwdriver and a few screws." The packing or loading is suspended for a short time, and, with the aid of a couple of smart lads whose noses and cuffs show evident signs of a hard glasspapering bout, the knobs, blocks, and castors on the table and arm-chair legs are set to rights. Wheeling round again by the angle of the cross street, we encounter our old friend and cicerone, who promised to meet us near the church.

"That has been somewhat of an improvement," quoth the "Oldest Inhabitant," pointing in the direction of the churchyard; "and it would be desirable if others of our old dead churchyard walls were also removed and turned into open spaces, laid out with walks, planted with flowers, provided with seats and a fountain or two, amidst which the people might retire on a long summer evening for rest and contemplation. Polly-street, sir, has seen but few improvements; and in this portion of the street, with one or two exceptive features, it has gone down the hill in respectability and all else.

"A short time subsequent to the Battle of Waterloo a Mr. Quarles lived over opposite; he was one of the old school of printers, and occasionally published some useful books. It did not much matter to him who called upon him to print or publish. He looked upon the order as a commercial transaction,

and executed it whether it pleased Whig or Tory, high churchman or low churchman, or even no churchman. I remember some of his old pamphlets and books very well. Among his theological class was 'Peter Dens' controversial work, and among his architectural ones was 'Stitt's Measurer.' Being related by marriage with the building profession, I had in my early days a great fondness for looking up old buildings and old books upon the profession. 'Stitt's Measurer' was written by one William Stitt, who, if I remember right, was a pupil to one of our famous architects early in the present century. It was a book of figures, measurements, and prices for the use of country gentlemen as well as city builders, telling them how they could best get their work executed, and the kind of material best suited for the purpose. Prices for timber and workmanship were given in the book, or for workmanship alone. Since the days of Billy Stitt things are greatly altered, and iron now supplies many of the purposes for which timber was used.

"Opposite to Quarles' house a musical instrument maker lived, whose name I forget at this moment. He made or sold first-rate fiddles—instruments that could almost play of their own accord if you held their bellies up against the wind. The instrument maker always exhibited a rare collection of old music in his shop windows, which he would not sell unless he got his own price. Some of this was Dublin-composed music, and dated back to the days of Handel's visit to Dublin. Some of it was printed on Essex-quay and others in Dame-street, in the middle of the last century.

"Many years ago I used occasionally come to this street to attend vestry meetings near the church, and what rows there used to be! The most noted characters were two colleagues who lived within a quarter of a mile of each other. One was a hatter and the other a schoolmaster. They managed to have all the talk nearly to themselves; what one proposed the other seconded. The proposer of the motion spoke for an hour and a-half, sometimes two hours; and his second, the hatter, continued speaking until he wearied out the patience of the ratepayers, and they left for home. When the vestry hall was pretty well thinned of members the hatter would conclude his speech, and ask the chairman to put the motion. If any other member rose to reply, the schoolmaster would rise to a point of order, and then the real disorder would commence, the meeting generally breaking up in great confusion. What were their names, sir? Yes, I should have mentioned that at first. The hatter was known as Kit M'Gloin, and the schoolmaster boasted of the Milesian name and surname of Cornelius Redmond O'Mulrennan, B.A. It would be difficult to say, sir, which could hold out the longer—the hatter had the most lingo, the schoolmaster the most learning. The latter was a writer of books as well as a teacher of the classics, including the Ogham character, of which, in his own opinion, he knew a great deal more about than either Sylvester O'Halloran, your namesake Theophilus O'Flanagan, or the great Eugene O'Curry. The hatter was a member at one period of the 'Hibernian Board of Manufactures and Neglected Industries,' and he was employed as a district and country organizer. O'Mulrennan did a portion of the local work and the weekly speeches, and he found an able auxiliary in the speaking department in the person of a Mr. Frizelle, who lived in the same Polly-street a little higher up there. Towards the close of his life O'Mulrennan gave up his collegiate seminary and tasted of the pleasures of purgatory by starting a patriotic newspaper to advocate home-grown tobacco and oak saplings intended for shillelaghs and other useful purposes 7 ft. long. The schoolmaster, sir, was a great advocate of the temperance cause, but by the advice of his doctor he took a little of 'seven year old' himself. He was, after all, a warm-hearted fellow, and had a wonderful stock of all kinds of knowledge, but so thickly

was it embedded in his cranium it often had not sufficient room to exude. If ever a schoolmaster and patriot died of too much stuffing, that man was poor O'Mulrennan.

"I remember on one occasion, some half a century ago, going to hear him give a lecture at the Craftsman's College. He came forward on the platform full of his subject, but it refused to come out until he was greeted with deafening applause. The safety-valve then gave way, and there was a burst of rhetoric that thunderstruck everybody. Some envious creatures, of course, who did not understand the schoolmaster's logic, began to cry 'enough, enough,' but the patriot thundered on, careless of the interruption. The audience were kept an hour longer than they expected, but there was no help, as the saying is, for spilt milk. One mischievous wag who sat near me on one of the back seats, when he failed to drown the voice of O'Mulrennan, tore some slips of paper out of his note-book and pencilled a number of copies of the following parody on Goldsmith, which he handed to all within his reach:—

'Fools and philomaths may flourish or may fade,
A laugh can make them as a laugh has made;
But a bold pedagogue sublime upon the flute,
If not put out, will squelch the Institute.'

The two irrepressibles, M'Gloin and O'Mulrennan, have been dead many years, and Frizelle has followed them to their mother earth. I hold some of their books, speeches, and MSS., which I will hand you over, as I promised. As my literary executor, you will be welcome to them.

"I have no time to-day to enter into particulars about these buildings further up the street. The old Broomstick House has many memories connected with fires, water plugs, and paving stones, and the Hall of Physic deserves honourable mention. Of monster houses and minor houses, too, in this street I would like to tell you some olden stories, bristling with facts that are stranger than fiction. I will endeavour to inform you of all in course of time; for, though some of these matters hinge on to Polly-street, they have a connection with other streets and lanes in Unknown Dublin."

Shaking hands at the shop door of a friend who had invited us in to view a work of art, we parted for awhile with the "Oldest Inhabitant."

THE CITY AUDIT.

We have been asked to say when do we think the audit of the city accounts will be ready, or, in other words, when will Mr. Finlay, the Government auditor, be able to give his statement. To which queries we answer—"We don't know." Not knowing with us does not imply not caring, for we do care, and hundreds more of our citizens also care. A government audit, though valuable in itself, does not afford a sufficient deterrent or check upon public board or corporate extravagance. Despite of the audit, moneys may be voted and payments made, and accounted for in such a manner as would puzzle the greatest adept or expert in money matters to find out. The Corporation have, in pursuance to certain acts made and provided for the conduct of corporate duties, ample room to raise and vote moneys, and sums may be squandered to any extent, to the benefit of individuals instead of the public benefit. Public contracts afford a wide field for financing, in the shape of commissions, &c. Public moneys are looked upon with a wistful eye; and, as the source affords a constant supply, the waste is viewed with a matter of small moment. The individual depositor is careful to not overdraw his account, in fear the bankrupt court might soon be acquainted with the particulars. The bankrupt cannot recoup his losses by drawing again on his creditors, but an indolent corporation may re-tax those whom they originally fleeced, and live on their extravagant career to the end of their tether, proud of their municipal bantam, which in their case is not a national but a chronic local debt.

"THE QUERIST."

BY GEORGE BERKELEY, BISHOP OF CLOYNE.

(With Notes by "Dubliniensis.")

"FIRST PUBLISHED A.D. MDCCLXXIV."

WHETHER our natural Irish are not partly Spaniards and partly Tartars, and whether they do not bear signatures of their descent from both these nations, which is also confirmed by all their histories? [There has been an intermixture of Iberian blood in the early colonization of this country, but a love of flocks and herds does not prove a people to be Tartars, neither does true history confirm the statement. Nevertheless, Tartar characteristics or the features of wandering tribes have been examples among our people.]

Whether the Tartar progeny is not numerous in this land? And whether there is an idler occupation under the sun than to attend flocks and herds? [This country still suffers from a too great attention to flocks and herds to the neglect of manufacturing resources.]

Whether the wisdom of the state should not wrestle with this hereditary disposition of our Tartars, and with a high hand introduce agriculture? [Far better would it have been had we with a high hand two centuries since introduced manufactures, instead of putting restraints upon them to the encouragement of flocks and herds.]

Whether once upon a time France did not, by her linen alone, draw yearly from Spain about eight millions of livres?

Whether the French have not suffered in their linen trade with Spain by not making their cloth of due breadth, and whether any other people have suffered and are still likely to suffer through the same prevarication?

Whether the Spaniards are not rich and lazy, and whether they have not a particular inclination and favour for the inhabitants of this island; but whether a punctual people do not love punctual dealers?

Whether about fourteen years ago (1721) we had not come into a considerable share of the linen trade with Spain, and what put a stop to this? [Prohibitory enactments put a stop to this and other resources similar; but towards the close of the last century the linen trade of Belfast was begun under more favourable auspices and continued to prosper ever since.]

Whether if the linen manufacture were carried on in the other provinces as well as the North, the merchants of Cork, Limerick, and Galway, would not soon find the way to Spain? [Aye, to the Antipodes, and prosper by the passage.]

Whether the woollen manufacture of England is not divided into several parts or branches appropriated to particular places where they are only—fine cloths in Somersetshire; coarse in Yorkshire; long ells in Exeter; saies (serge) in Sudbury; crapes at Norwich; linseys at Kendal; blankets at Witney, and so forth? [These divisions, as we have already shown in a paper apart from the present, do not hold good at the present day, as many of the above places produce fine as well as coarse articles of woollen manufacture; and are not confined to the production of one kind of article alone. The woollen manufacture is extensively distributed now over the three kingdoms.]

Whether the united skill, industry, and emulation of so many together at the same work be not the way to advance it. And whether it had been otherwise possible for England to have carried on her woollen manufactures to so great perfection? [Since the era of steam and the construction of railways everything has almost been made possible. Men have to compete with their next-door neighbour even with greater energy than if they carried on a similar business five hundred miles distant.]

Whether it would not on many accounts be right if we observed the same course with respect to our linen manufacture, and that diapers were made in one town or district, unsmocks in another, sheeting in a third, fine

wearing linen in a fourth, coarse in a fifth, in another cambrics, in another thread and stockings, in others stamped linens or tickens, or dyed linen, of which last kinds there is so great a consumption among the seafaring men of all nations? [This rule has been partly observed in the past, and several of our Irish towns during the eighteenth century were famous for their own special local manufactures. In these days of rapid travelling and conveyance, manufactures are started wherever they suit their projectors best.]

Whether it may not be worth while to inform ourselves of the different sorts of linen which are in request among different people?

Whether we yearly do not consume of French wines about a thousand tuns more than either Sweden or Denmark, and yet whether those nations pay ready money as we do?

Whether it be not a custom for some thousands of Frenchmen to go about the beginning of March into Spain, and, having tilled the lands, to return home with money in their pockets about the end of November?

Whether of late years Irish labourers do not carry on the same business in England, to the great discontent of many there; but whether we have not much more reason than the people of England to be displeased at this commerce? [We see by this query of Berkeley that it was the custom for Irish harvestmen to go over to England early in the eighteenth century. It would be instructive to know at what particular date the first batch of Irish reapers or mowers first crossed the channel, and whether it was a voluntary migration, or proceeded from an invitation from English land proprietors and farmers.]

Whether, notwithstanding the cash supposed to be brought into it, any nation is in truth a gainer by such traffic?

Whether the industry of our people employed in foreign lands, while our own are left uncultivated, be not a great loss to the country? [The answer is self-evident.]

Whether it would not be much better for us if, instead of sending our men abroad, we could draw men from the neighbouring countries to cultivate our own?

Whether, nevertheless, we are not apt to think the money imported by our labourers to be so much clear gainers to this country, but whether a little reflection and a little political arithmetic may not show us our mistake?

Whether our prejudices about gold and silver are not very apt to infect or misguide our judgments and reasoning about the public weal?

Whether it be not a good rule whereby to judge of the trade of any city and its usefulness, to observe whether there is a circulation through the extremities; and whether the people round about are busy and warm? [A very good rule indeed, whereby to judge the trade of the country as well as the city. At the present day both the extremities of the city and the island are far from being warm—nay more, there is a deadly coldness about the region of the heart of this city.]

Whether we had not some years since a manufacture of hats at Athlone, and of earthenware at Arklow, and what became of those manufactures? [As before alluded to we may say we had several local manufactures now extinct. Temple Bar, Dublin, was once a hot-bed of hatters; and at Mullinahack, on the south side, there was formerly a manufactory of extensive coarse earthenware, tiles, pantiles, &c. At Belleek, in the north of Ireland, we have at present a handsome description of pottery manufactured, which has gained repute, but not as much as it is entitled to. Belleek ware, either for the table or the kitchen, is fitting and durable.]

Why do we not make tiles of our own for flooring and roofing, rather than bring them from Holland? [We bring them mostly from England at present although we have the clay in abundance.]

What manufactures are there in France and

Venice of gilt leather, how cheap and how splendid a furniture?

Whether we may not for the same use manufacture divers things at home, of more beauty and variety than wainscot which is exported at such expense from Norway? [Joinery work and wainscoting come to us still from the continent although we have steam saw mills and planing machinery. This query of Berkeley's throws light upon a custom that must have existed long previous to 1785—that of importing wainscoting, or boarding, or panelling for walls from Norway. We would like to know if the wainscoting spoken of was really prepared joinery work, or simply the timber leaves or planking intended for wainscoting. If prepared joinery work was imported at that date from Norway, some interesting questions would arise in connection with the design and erection of buildings in great Britain and Ireland.]

Whether the use of the fashion will not soon make the manufacture? [Use and fashion always create a manufacture, but fashion *per se* is not to be depended upon, being a very unstable foundation on which to build one's hopes or trade.]

Whether if our gentry used to drink mead and cider, we should not soon have those liquors in the utmost perfection and plenty? [There is very little cider or mead made in Ireland, and of the imported cider that is sold by our publicans the greater quantity of it is scarcely fit to drink. Porter and whiskey are so plentiful and so in-spiriting we fear our people will not trouble their heads about reproducing the olden drinks of the country, the primitive mead and heather beer of Danish days. Irishmen have good reason to curse the perfection and plenty of native liquors.]

Whether it be not wonderful that, with such pastures and so many black cattle, we do not find ourselves in cheese? [Even at the present day, cheese is an article that is not produced in this country except in a small way. Our butter is exported, and our farm labourers get the buttermilk as a substitute for cider or beer; but the gift is not general, as the buttermilk is made an article of profit, whether used by the peasant or the pigs.]

Whether great profits may not be made by fisheries; but whether those of our Irish who live by that business do not continue to be drunk and unemployed one-half of the year? [The fisheries of this country have been always neglected, whether inland or deep sea. Manx and Cornwall fishermen spread their nets under the noses of our natives, and the small and large harbours around our coasts are often crowded with a forests of masts. Often our Dublin and Wicklow fishermen have purchased "hauls" from their English rivals, and brought them into the market as their "own take." Of late years some little improvement has set in in certain localities, yet our fishery resources are grossly neglected by our own countrymen.]

Whether it be not a folly to think an inward commerce cannot enrich a state, because it doth not increase its quantity of gold and silver. And whether it is possible a country should not thrive while wants are supplied and business goes on? [A nation can thrive whether insular or not by its inward commerce.]

Whether Lyons, by the advantage of her midland situation and the rivers Rhone and Saone, be not a great magazine or mart for inward commerce. And whether she doth not maintain a constant trade with most parts of France—with Provence for oils and dried fruits; for wines and cloth, with Languedoc; for stuffs with Champain; for linen with Picardy, Normandy, and Bretagne; for corn with Burgundy?

Whether she doth not receive and utter all these commodities, and raise a profit from the distribution thereof, as well as of her own manufactures throughout the kingdom of France?

Whether the charge of making good roads

and navigable rivers across the country would not be really repaid by an inward commerce? [In the palmy days of our inland navigation this was proved, and our railway communication still proves it.]

Whether, as our trade and manufactures increased, magazines should not be established in suitable places fitted by their situation, near great roads and navigable rivers, lakes, and canals, for the ready reception and distribution of all sorts of commodities, from and to the several parts of the kingdom, and whether the town of Athlone for instance may not be fitly situated for such a magazine or centre of commerce? [Half a century after Berkeley had penned these queries, steps were taken to carry out these suggestions by the construction of the Grand and Royal canals—canals which are still useful although their general uses have been superseded by our railway system. The queries of George Berkeley gave rise to many projects in his time and since, and they still are suggestive of various improvements which we hope will be realised in our time.]

(To be continued.)

ARCHITECTURAL ASSOCIATION OF IRELAND.

An Ordinary General Meeting of this body was held on Thursday, the 30th ult. The President, J. J. O'Callaghan, in the chair. There was a very numerous attendance. The minutes of previous meeting were read and confirmed.

The following gentlemen were balloted for and elected:—Messrs. R. R. Brash, J. Coppinger, W. J. Symes, J. Farrell, Charles Spadacinni.

A paper by Mr. E. T. Owen on "Architectural Details in Common Use" was, in the absence of that gentleman, read by Mr. C. H. Brien. (The paper will be found in *extenso* in our columns.)

In the discussion which followed the reading of the paper—Mr. Longfield (hon. sec.) said that dentils are most effective members of a cornice, and that the use of triglyphs in Classic work may be accounted for quite as well as many features in Gothic. We ought not to forget that it is from Classic art we have got our caps and bases. Pediments are a very natural form, provided always that what is behind them is not a sham. Architecture in the present day is copied from what has been done in the past. Everything seems to have been done already. If anything is to be done in the way of a modern or Victorian style, it must be a mixture of the old styles, as in music with the same notes any amount of variety may be obtained.

Mr. John L. Robinson, in proposing a vote of thanks to Mr. Owen, said that he agreed with Mr. Owen that triglyphs in the Doric order were shams, being an imitation of what they were not—viz., ends of timber or wood construction. As for Gandon's works—the Custom House, Four Courts, and Bank of Ireland,—none could deny the ability with which those buildings had been treated, and with a freedom which might well be copied. Wall columns in Classic were, he considered, not to be deprecated when used for the only purpose to which they are legitimately adapted—as buttresses to strengthen a wall and perform the same function as buttresses in Gothic. As for iron construction, in New York they go so far as to form the framework of the building of iron bars and girders, and to hang thin slabs of marble, sometimes only 1 in. thick, in front, giving the appearance of a solid ashlar building; while in reality it was a mere skeleton of iron without constructive truth. We sometimes see iron columns used in shops to support buildings three storeys high placed at the quoins behind the plate-glass of the shop, the only visible support to the heavy building overhead being the sash-bar, the columns being carefully concealed by the goods displayed in the window. As for the pitch of roofs, he thought that they should be as high as possible. He thought that too little care is bestowed on the surface decoration of roofs. Often in buildings where various coloured materials have been used we find the roof left one flat surface of the same colour. Could it not have been treated as the walls, with parti-colour or scolloped slates? or, better still, broken up with dormers, lunettes or ventilators? He was of opinion that the grouping or outline of a building is of far greater importance than the detail. As for the plainer of our middle-class houses, from the earliest ages the bulk of the population lived in comparatively flimsy and plain dwellings. He considered that the very unsatisfactory appearance of modern street architecture was due to the fact that the houses were

roofed parallel to the street, and not as they ought to be, at right angles to it, as we see in old houses of the Queen Anne period in the liberties of Dublin; the effect of the gables, as they are vulgarly called Δ roof, being most picturesque and pleasing. No trace of the middle-class dwellings of the ancients remain, and it is considered that they must have been very rude indeed, although they have left behind them such beautiful temples. In conclusion, he moved a vote of thanks to Mr. E. T. Owen and Mr. Brien.

Mr. A. W. Robinson, in seconding the vote of thanks, said that the upper surface of mouldings ought not to be flat, but should be weathered to throw off the dust and rain.

Mr. Mitchell said that he agreed with Mr. Longfield that dentils were a beautiful form of ornament (no matter what may have been their origin) somewhat analogous to billet moulding of Gothic. He thought it would be an evil day when vaulting was disused. As for iron being the building material of the future, he would rather say of the past, as eminent engineers have discovered that it will not bear exposure to the weather. The iron bridges will not last half so long as the stone ones, which, when generally known, the use of iron would, he was sure, be discontinued. Iron is not, from the evidence of Captain Shaw, of the London Fire Brigade, a fireproof material; he says that he would prefer a wooden beam to resist the action of fire. He hoped that everyone with artistic taste would not be sorry to see the last of iron in architecture. He thought Mr. Owen might have laid greater stress on truth; a truthful building may be designed in any style.

Mr. Brien said that, although he read the paper for Mr. Owen, yet he thought he was entitled to join in the discussion. He thought that concrete is a more reliable material than Mr. Owen said, as it had in many instances withstood the heat of fire. He knew that Mr. Owen looked on vaulting as of the past, on account of its great weight and the thickness of the walls necessary for its support. The tendency of the present day was against shams. As regards the parapet, some thought no public building should be without one. The public offices in Belfast, when first designed, were without a parapet; the townspeople protested that it was not a public building, not having a parapet, and so great was the agitation that the plans had to be submitted to the Treasury for consideration.

The President, in putting the vote of thanks, said that Mr. Owen deserved the very best thanks of the Association for his able paper, which embraced such a large area that it would be impossible to go into every matter. He agreed with Mr. Mitchell in the tendency of the present day to strip buildings of their ornament. He thought it was not necessary to look too closely into the origin of mouldings or their ornamental features. As for the praise of old buildings for their grouping, he did not think they deserved it, as some are remarkable for their shams and bad grouping; take, for example, Salisbury Cathedral, the effect of which is most unsatisfactory. He looked upon the ornament of ancient buildings as their ruin. As for parapets, he thought they were indispensable for the purpose of repairing roofs, &c. He considered the domestic buildings of France in the middle ages most beautiful, and perfectly adapted to the wants of their inhabitants. The vote of thanks was carried by acclamation.

Mr. Brien, in returning thanks, said that Gothic buildings were often shams. Look at Antwerp Cathedral, where the spire is a fretwork of stone, supported wholly by iron—a practice he was sorry to see imitated in Austria. As for the parapet, he thought it most useful. At the National Gallery some time ago a poor painter was maimed for life and narrowly escaped death through falling from a skylight which he was painting. In conclusion, he begged to return thanks on the part of Mr. Owen and himself for the favourable reception the paper had received.

BELFAST ARCHITECTURAL ASSOCIATION.

A MEETING of the Belfast Architectural Association was held on Monday evening 3rd inst., at the Museum. Robert Young, Esq., occupied the chair.

Mr. R. Watt, B.E., F.R.G.S., read a paper on "Architectural Education." The reader referred to the great want that existed for a thorough systematic training for architectural students, especially before entering an office. He suggested that, as a step in the direction of supplying this want, architecture should be recognised as well as engineering in the Queen's Colleges, and advocated the appointment of a lecturer on architecture at each college. He recom-

commended that the Belfast Architectural Association, until something better be substituted, should take up this work in Belfast, and, as a commencement, open classes for instruction in the science and history of architecture, and offer prizes to the younger members for drawing. The association have already a class of design meeting fortnightly, and which is largely attended.

Messrs. S. P. Close, A.R.I.A.I.; Alexander M'Allister, W. Doubleday, F. Lockwood, R. M. Young, L. Phillips, and the chairman took part in a very interesting discussion which ensued.

The usual votes of thanks to the chairman and reader were passed, and the proceedings terminated.

THE ROYAL HISTORICAL AND ARCHÆOLOGICAL ASSOCIATION OF IRELAND.

THE annual meeting of the above association took place at the rooms, Butler House, Kilkenny, on the 15th ult. The proceedings were of a valuable and most interesting nature. The appeal for local aid in support of the museum and library which was made some time ago, is as yet only partially responded to, but we trust that before the close of the year the association will meet the support it deserves, not only from the local but from the general Irish public. The suggestion thrown out about establishing a school of art in connection is well worthy of consideration, and it should by all means be carried into effect. If any institution in Ireland deserves support the present association does, for it has laboured long and zealously, and achieved a remarkable amount of labour on small funds—labour that reflects honour upon Ireland and upon the members of the association.

The Rev. James Graves brought up the report of the committee for the past year, of which we print an abstract:—

The year which has passed over the Association since your committee delivered their last annual report has been one of fair average progress.

The Fellows elected during the past year were:—The Marquis of Hartington, Chief Secretary for Ireland; the Right Hon. the Earl of Desart; The O'Donovan; John Evans, F.R.S., F.S.A.; O'Connell Hackett; Stuart Knill, and Rev. Hugh Prichard.

The following, already members of the Association, have taken out their fellowships, under the Queen's Letter:—The Very Rev. F. M. Watson; J. Cassimer O'Meagher; Barry Delany, M.D.; and Robert Romney Kane.

Six fellows and thirty-nine members have been elected during the year, and the number now on the roll amounts to seven hundred and one, thus recovering the decrease of last year, and showing a clear gain of nine over 1870, allowance being made for resignations, deaths, and names removed for non-payment of arrears.

The subscribers to the Annual Volume now number two hundred and seventy-four, and five volumes have been issued, viz., for the years 1868, 1869, 1870, and 1871, whilst that for 1872 is just ready.

The appeal to the public of the county and city of Kilkenny, recommended in the report of last year, for aid to place the Museum and Library of the Association on a permanent and efficient footing, has been issued, and it is to be hoped, for the credit of our county and city, that it will be favourably responded to.

Considerable progress has been made in the repairs at St. Francis' Abbey, Kilkenny, under the zealous and efficient direction of Mr. Middleton. The haunches of the tower have been effectually and permanently secured with hammered stone, and made water-tight; and a small additional sum would now suffice to place the entire of this beautiful example of Gothic architecture in a very satisfactory state. Too much credit cannot be given to our associate Mr. Middleton for the care and judgment with which he has carried out the very critical operations needed to save the graceful and beautiful tower from impending ruin.

The financial condition of the Association continues to prosper. Your Treasurer reports a considerable balance in hands—whilst the commencement of a Reserve Fund has been formed by the investment, in the names of your Trustees, of £200 in Government 3 per cent. stock, producing £217 10s. 11d. It is still, however, to be regretted that there should be a considerable number of the

members who allow their subscriptions to fall into arrear, thus inflicting a loss by the expenditure of a large sum of money on circulars and postage instead of on legitimate objects of the Association, and imposing much needless labour on your Treasurer.

The treasurer handed in the accounts, showing a favourable state of the pecuniary affairs of the Association.

Mr. Robertson and Dr. Fitzsimmons consented to act as auditors, their report as to the audit to be submitted at the April meeting.

The Rev. James Graves said that it would be too soon yet to judge of the probable result of the appeal to the local public for support for their Museum and Library as a separate institution for the general benefit of Kilkenny, but he thought it right to mention that the President, the Very Rev. Dean Vignoles, had authorised him to state that he would subscribe £2 per annum for that purpose. He (Mr. Graves) had been in communication with a gentleman—a member of the Association—connected with the South Kensington Department, who informed him that in order to secure Government aid through that department, it would be necessary that they should have a drawing class—that is, a local school of Science and Art, connected with the Museum. Other towns—their neighbour city of Waterford, for instance—had such schools, which were doing well, and, in fact, it seemed to him that by making some arrangement of the kind here, they would confer an additional benefit on the locality, as he was informed that there actually was no drawing-master in Kilkenny at present, and that the inhabitants were unable to have any instruction in that way for their children.

Mr. Ryan, Kilkenny Model School, fully concurred with Mr. Graves as to the importance of the suggestion, as a benefit to the local public. An efficient drawing master was a great want here at present, and the various schools would, he considered, gladly avail themselves of the services of one who might be engaged in connection with a School of Art in Kilkenny, besides the private tuitions which he would obtain. If they established a School of Art, under the South Kensington arrangements, in connexion with their Museum, there would be sufficient additional inducements in the way to which he had referred to bring a first-rate man here to conduct it.

After some further conversation on the subject, it was arranged that Mr. Ryan—who undertook to act in the matter—should obtain all the necessary information as to the circumstances under which Schools of Art, in connexion with South Kensington, were established in other places, and the committee were empowered to take such steps on the subject as might seem to them expedient, as soon as Mr. Ryan would communicate to them the result of his inquiries.

Mr. Graves stated that there was no vacancy in the committee and officers of the Association for the past year, except the honorary provincial secretaryship for Connaught, from which Mr. Kinahan had retired in consequence of being removed elsewhere, in connection with the Geological Survey of Ireland. All the others were eligible for re-election, if it was the wish of the meeting to make that arrangement, and he had the permission of the O'Connor Don to propose him for the vacant honorary secretaryship for Connaught.

On the motion of Mr. J. Hogan, seconded by Mr. Ryan, it was then resolved that the O'Connor Don be elected honorary provincial secretary for Connaught, and that the committee and other honorary officers of the past year be re-elected for 1878.

The following were admitted as members of the association:—The Earl of Dartrey, Sir W. A. Staples, J. S. Phene, F.S.A., F.G.S.; Very Rev. Wm. Hayden, P.P., V.G.; Philip Raymond, Rev. P. A. York, R.C.C.; T. B. Kynsey, J.P.; Thos. O'Reilly, James Kieran, Rev. G. G. Ballard, Rev. P. White, R.C.C.; M. O'Sullivan, T. Cathar, J.P., M.R.I.A.

ANCIENT FICTILE VESSEL.

Mr. Malcomson, Carlow, exhibited, on the part of Dr. O'Meara of that town, a very graceful primeval urn of baked clay, curiously ornamented with incised markings. It was 4 in. in height, the widest diameter being that of the rim round the mouth, which was 5 in.; the least diameter at the bottom, 2½ in. It had been found by a farmer named Doyle, residing at Killerrig, Co. Carlow, in deepening a passage from his yard to his haggard. He met with a small boulder, on raising which he found it had formed the covering of a little kist formed of granite stones, just sufficient in size to contain the urn.

Mr. Graves pointed out that this urn had a rim round the bottom, unlike those in their museum, in which burnt bones had been found; and it appeared to belong to the class which the English archaeologists now designated "food vessels," they being frequently found in kists along with larger urns containing burnt bones; and the supposition was that food was placed in them by the pagan aborigines of these countries for the use of the spirit of the departed relative whose burnt remains filled the other vessels, whilst on the journey to the next world.

The question was discussed whether, in this case there being no other urn containing ashes, this could be looked on as a "food vessel," or as to the probability of another kist existing adjoining that which had been opened, in which the cinerary urn would be found if another search were now made.

Mr. Malcomson kindly undertook to have a photograph taken of the urn, with Dr. O'Meara's permission, for an illustration in the association's Journal; and the meeting passed a special vote of thanks to Mr. Malcomson for carrying from Carlow, specially to exhibit to them, this interesting object.

INTERESTING LOCAL RECORDS.

Mr. Watters exhibited eight ancient vellum documents from the Kilkenny Corporation archives, of much antiquity and in the most admirable state of preservation. With one exception they were in old contracted Latin, and the character of all very difficult of decipherment.

The old records were examined with very great interest by the members present, and a special vote of thanks was given to Mr. Watters for exhibiting them; a hope was expressed that the corporation would permit them to be transcribed for publication in the association's Journal.

THE TRADE OF KILKENNY IN 1788.

Mr. Kinchella had, amongst the other matters intrusted to Mr. Prim for exhibition, sent a copy of "The General Directory of the Kingdom of Ireland, or Merchants' and Traders' most useful Companion," printed in Dublin, by B. Dugdale, No. 150 Capel-street, A.D. 1788. It supplies lists of the inhabitants, with the various trades and callings, of twenty-six cities and town, and amongst them those of Kilkenny. In this city it appears there were then 280 persons in trade, but the matter of the greatest interest which it tended to illustrate was the state of manufacturing industry which Kilkenny then exhibited. There were 24 broad-cloth manufacturers, 7 tanners, 8 brewers, 8 distillers, 5 starch manufacturers, a maltster, a stuff manufacturer, a paper maker, and a marble manufacturer; there were 24 grocers, chandlers, and tobacconists, 15 linen and woollen drapers, and the other trades in proportion. As regarded the professions, there were 8 barristers-at-law, 7 physicians and surgeons, 1 surgeon alone, 1 surgeon and apothecary, 4 apothecaries, 8 attorneys, 1 architect. There were 8 schoolmasters, 1 land surveyor, 1 notary public, and 1 nursery and seedsman.

Amongst the other objects sent by Mr. Kinchella were, a stone celt, found by his father in 1818 amongst a parcel of human bones and embedded in a skull about 12 ft. below the surface, in his land at Greenville; a bronze celt found on the banks of Lough Neagh; and the brass shako plate of the 59th Regiment, found on the strand of Tramore

in 1828, and which appeared to have been then washed in, after having remained in the sea since 1816, on the 16th January in which year 12 officers and 264 non-commissioned officers and men of that gallant corps were lost in Tramore Bay by the wreck of "The Seahorse" transport.

All the objects sent by Mr. Kinchella were examined with great interest, and the meeting, on the motion of the Mayor, passed a special vote of thanks to that gentleman for the gratification he had thus kindly afforded it.

Mr. Malcomson exhibited two pictures in water-colours; one purporting to represent "John Digby," and stated on the back to be painted by Bishop Digby; the other apparently of the Duke of Marlborough, not endorsed, but obviously from the same pencil. Right Rev. Simon Digby was Bishop of Elphin, and died in 1720; a contemporary authority states his talent for taking likenesses in water-colours to have served highly to recommend him for the episcopal appointment!

Amongst the papers brought before the meeting were:—"Notes on Powerstown Church," by Mr. Robertson. "Patron Saints, Patron Days, Holy Wells, and other memorials of ancient times and places in Ossory," by Mr. J. Hogan. "On the Clan Kavanagh," by Rev. J. Hughes. "On a Pagan Cemetery at Drumakilly, Co. Tyrone," by Mr. W. F. Wakeman (with numerous beautiful illustrations). "On a Kitchenmidden (or ancient refuse-heap) discovered at Cork Harbour," by Mr. G. M. Atkinson.

A vote of thanks having been passed, in the usual form, to donors and exhibitors, an adjournment took place till the first Wednesday in April.

PLAYWRIGHT CRITICS, ACTING CRITICS, AND HYPER-CRITICS.

WHICH of the three are entitled to be heard with the most respect? Has a man who writes a play himself, and is engaged in writing plays, a right to act the newspaper critic in condemning or praising the plays of his brethren of the stage, whether they be his friends or enemies? On the other hand, has the ordinary reporter or penny-a-liner, who often knows no more about music than a cow does of an eclipse, a right to intrude his criticism on the public? Answers to these questions are desiderated, for on them depend whether the public are fooled, are content with being fooled, or desire to be fooled no longer.

The action brought by Mr. Charles Reade against the *Morning Advertiser* for an alleged libel, and which resulted in the jury awarding damages for a "slander" of his fair fame, opens up a wide and important question. Whether the dramatic critic of the *Morning Advertiser* told more than the truth in his criticism of "Shilly Shally," we are not prepared to say, as we have not had the pleasure of reading that doubtful production. Several critics pronounced passages of the play to be "indecent," but the jury took another view of the case.

From what we could see in the report of the trial, Mr. Lee, the critic of the *Morning Advertiser*, seems to have acted in an honorable manner. When he became a dramatic critic on a daily newspaper (being a playwright himself), he gave up the producing or rather the offering of any plays for immediate production at any of the theatres. Apart from this, however, we desire to remark that there is need of a radical change in the method adopted by our newspapers in procuring both musical as well as dramatic critiques. We have stated in a former issue that the majority of our newspaper notices are shameful, yea more than shameful—they are positively dishonest, and as such are utterly unworthy of credence or respect. We have a number of scribblers ready to write up or write down an actor, actress, musician, or singer at a moment's notice, and their good or bad words depend upon the mere chance whether these scribblers or their employers are "satisfied."

There is yet another form which we may term the non-critical dodge, the *sub silentio* move, by which many good actors and singers are unnoticed, because they have offended the critic or his brethren who sup together perhaps in the same little club, and who enter into something like a compact to write up their friends, and write down the "know-nothings" who will not scrape their acquaintance. The father of a young and clever artist had to complain lately, through the pages of a musical contemporary, of the studied neglect evidenced by two or three leading journals towards British musicians, and instanced the struggles of his own daughter, who was denied the meed of praise to which she was entitled. We allude to the case of Miss Sophie Heilbron, who, it may be remembered, was well received last summer at the Dublin Exhibition Palace, and whose performances upon the piano showed remarkable skill. This young lady has only reached her sixteenth year, and has been before the public since she was eight years old. Surely she is entitled to a good word when she has deserved it, and as she is still young it is likely she will yet show more remarkable powers. It is plain we need honesty and education as an essential in musical and dramatic criticism, but with a few exceptions it is not to be found even in London, and we have already proven it is almost non-existent in the city of Dublin.

BOOKS RECEIVED.

Report of the Working Committee of the Dublin Sanitary Association, with the Rules, &c. 1873.

By the issue of this pamphlet the Sanitary Association brings prominently before the public the praiseworthy work in which they have been for many months engaged. We hope the gentlemen who have undertaken the duty of inspecting and reporting upon the "fever nests" of this city, its lanes and alleys, (at present completely neglected by "No. 1.") will continue their labours still further. The widespread circulation of this brochure is much to be desired. The series of lectures on "Public Health" to be given in the Theatre of the Royal Dublin Society, are, we opine, likely to be productive of much good. The first lecture will be on the 22nd inst. by the Regius Professor of Physic, Trinity College.

Catalogue of Various Articles for Ecclesiastical and Domestic Use.

From Messrs. Brawn and Downing, Birmingham, we have received a copy of their sixth "Illustrated Catalogue of Architectural Metal Work." It comprises thirty-five sheets of lithographed designs for every form of mediæval and artistic iron and brass work supplied by this firm, and for which they are noted.

Falconer's Irish Railway Guide. Dublin: John Falconer, 53 Upper Sackville-street.

If the prime essentials of a railway guide be accuracy, easiness of reference, and sufficiency of information, without at the same time being too elaborate, Falconer's A-B-C guide will bear comparison with any other guide in Great Britain. We have always considered "Bradshaw," valuable as it is, an unhandy and perplexing book, and one requiring as much time to master in its details as some of our systems of shorthand. For English, Scotch, or Irish travellers, or tourists outward or inland bound, all the routes and fares can be ascertained without a moment's confusion or delay. The best hotels in each locality are also given, and the cab, car, and tramway charges. For the provinces the mail, stage-coach, and omnibusses, times of starting and fares are also set down. In short, Falconer's guide contains all that is indispensable to the traveller, whether he hails from across the Channel or across the Atlantic.

MUSICAL SOUNDS AND UN-MUSICAL ECHOES.

THE vicar of St. Andrew's Church publicly states that there is a complete cessation of the echo which was a characteristic, we may remark, of the old "Round Church" of St. Andrew's parish as well as the present new church which has displaced it. The desirable result has been accomplished by the wire suspension expedient across the church, which method has also been successful with other churches and halls in London. The vicar strongly recommends that:—"This simple and inexpensive method. About 8s. worth of wire will, I believe, prevent the echo in any building, if judiciously arranged, and completely break the wave of sound." It would be a desirable consummation if other forms of echo were also destroyed or controlled in our public assemblies—for instance, the City Hall. The discordant echoes that reach the public ear now and again from this building are not only waves but surges of sound and fury, and the sooner these unpleasant echoes are "wired" to Hong-Kong or Land's End, the better will it be for the character of this city and the public peace of mind.

TO CORRESPONDENTS.

ANTIQUARIAN LITERATURE.—We receive inquiries from time to time from English and Irish correspondents about works on our native antiquities. If our friends would write to or call upon John O'Daly, bookseller, Anglessea-street, he doubtless would supply them the information on the books they seek.

CASTING SAND.—The County Dublin can afford a plentiful supply of sand suited for foundry purposes, north and south of the city.

BUILDING DOWNWARDS.—An Irish bishop of the Establishment performed this novel feat, upwards of a quarter of a century ago. He commenced building the top storey, and finished with the basement. Practical builders may guess how.

A VIOLINIST.—Some fiddlers have been described with heads as empty as their instruments. The comparison was nowise just. A good instrument can give out something more than mere sounds, and, in the hands of a master, music that represents more than hollowness.

A REPORTER.—Send your name. Your class is a very respectable one, but, like many other classes, it needs a little wholesome reform. Will you be the pioneer?

FREE LIBRARIES.—A free public library for the use of the citizens in general could have been established long since by the Corporation of this city. It may come in time when the "Reformed Corporation" is once more re-formed, and the do-nothings relegated to the private life from which they never should have emerged.

THE "METAL" BRIDGE.—The tolls of this bridge should have been abolished thirty years ago, and the bridge thrown open to foot passengers. The Central Station Railway Scheme will not interfere with the improvement, as it is a dead letter at present; nor will the hopper-barges, which—but mum's the word.

CAROLINE.—Will be very happy to assist in any such movement. A ladies' sanitary association would do much good, as there is a wide field in which our Irish ladies could usefully and humanely exercise their time and talents.

"A VISIT TO EPPS'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAONE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbot-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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The Irish Builder.

VOL. XIV.—No. 317.

Lessons from the Census.

EDUCATION.

A CENSUS Report is a very uninviting document to the majority of readers. An array of almost interminable figures, even though they may be facts, are enough to scare away any persons whose tastes or occupations do not lie in the direction of statistical investigations. Nevertheless, it is from a census faithfully made out and clearly placed before the nation that those who are interested in the common weal are enabled the better to serve that weal. The census now under notice is that in relation to the County and City of Dublin, being the second volume of those issued by the Commissioners, the former treating of Carlow. We purpose, as a beginning, to look at the statistics as they relate to the education of the people, for education is the starting-point and basis of all greatness, moral, social, or commercial. A people steeped in ignorance must be a people prone to vice and a prey to wretchedness. A people without education are barbarians, a people but half educated are but half civilised; and their rulers, imperial and local, who would willingly permit such a state of things act in a criminal manner, and are more culpable than illiterate criminals. Ignorance is the pregnant parent of many evils—evils that take deep root, vices that take many generations of laborious work to entirely eradicate.

The educational statistics of the City of Dublin on the night of the 2nd April, 1871, shew that there are 151,202 who can read and write—viz., Roman Catholics, males 55,199, females 54,871; Protestant Episcopalians, males 15,781, females 16,380; Presbyterians, males 1,992, females 1,594; Methodists, males 755, females 762; all other denominations, males 2,172, females 1,746. Of those who could read only—viz., 25,639 persons—Roman Catholics, males 8,455, females 14,952; Protestant Episcopalians, males 598, females 1,216; Presbyterians, males 76, females 100; Methodists, males 18, females 26; all other denominations, males 80, females 125. Of those who were illiterate there were 69,485 persons!—viz., Roman Catholics, males 26,695, females 35,035; Protestant Episcopalians, males 2,952, females 3,020; Presbyterians, males 844, females 401; Methodists, males 145, females 122; all other denominations, males 403, females 378.

In the County of Dublin in 1861 the number and percentage of persons belonging to each religious profession were as follows:—Roman Catholics, 118,195, or 72·8 per cent.;

Protestant Episcopalians, 36,582, or 23·6 per cent.; Presbyterians, 2,660, or 1·7 per cent.; Methodists, 982, or 0·6 per cent.; all other denominations, 2,025, or 1·3 per cent. In 1871 the numbers in the county were—Roman Catholics, 111,664, or 70·5 per cent.; Protestant Episcopalians, 39,289, or 24·7 per cent.; Presbyterians, 2,995, or 1·9 per cent.; Methodists, 1,434, or 0·9 per cent.; all other denominations, 3,254, or 2·0 per cent. In the city in 1861 the religious census was as follows:—Roman Catholics, 196,549, or 77·1 per cent.; Protestant Episcopalians, 49,251, or 19·3 per cent.; Presbyterians, 4,875, or 1·9 per cent.; Methodists, 1,897, or 0·8 per cent.; all other denominations, 2,236, or 0·9 per cent. In 1871 the numbers in the city were—Roman Catholics, 195,180, or 79·2 per cent.; Protestant Episcopalians, 39,897, or 16·2 per cent.; Presbyterians, 4,517, or 1·8 per cent.; Methodists, 1,828, or 0·8 per cent.; all other denominations, 4,904, or 2·0 per cent. The total and percentage of the illiterate of five years and upwards in the County Dublin in 1861 was 30,967, or 22 per cent.; in 1871, 26,688, or 18·8 per cent. In the City of Dublin in 1861 the number of the illiterate was 47,008, or 20·7 per cent.; in 1871, 42,817, or 19·5 per cent. The entire population of the County and City of Dublin in 1861 was returned as 410,252 persons; in 1871, 405,262. The decrease between the two census periods was 4,990, or 1·216 per cent. in the entire population.

Let our readers scan attentively the above figures, and if they accept them as facts, which they must do perforce, what, may we ask, are the feelings the information will give rise to within them? Perhaps, after all, there are very few really concerned whether the county and city, morally, socially, or commercially, should go to the dogs, so long as they can move within their own grooves for the time and make money. An analysis of the census of the County of Dublin on the whole will not afford a matter for gratification. The improvements, when divided over a number of departments, are very small. The decrease of the population is a serious fact when placed beside the number of those who have improved in education in the lapse of ten years. When we shall on another occasion adduce the figures in relation to land and property and mechanical industries, as also those in relation to buildings, inhabited and uninhabited dwellings, or ones in course of erection, our readers will then have a better opportunity of forming an opinion upon the state of the County and City of Dublin at present as compared with the census of 1861. If we embrace the period of the last quarter of a century, then indeed Dublin can show a fair increase in population and in improvements, though not a very remarkable advancement as regards education.

The Irish language, as a spoken or written language, is fading from the city, notwithstanding the galvanic spurts that have been made by a few enthusiasts whose love for it seems to be as short-lived as their stability in perseverance. Neither our Catholic nor Protestant colleges or seminaries have achieved much. The total number of persons in the city in 1871 who spoke Irish only was 8; Irish and English, 1,085. Total number in county and city who spoke Irish only, 8; Irish and English, 1,688. In 1861 the total number of those who spoke Irish only was 8; Irish and English, 8,840. The old vernacular is not taking root either in

college or seminary, even as a "classic," so far as we can see. Between the ages of 20 and 30 there are 212 males and 91 females who speak Irish and English; between the ages of 30 and 40 there are 236 males and 97 females who speak both languages. Two persons are returned upwards of 100 years of age, who speak both languages.

We must drop off here for the present, promising to return to these vital statistics, and draw further Lessons from the Census.

THE BUILDING AND ORNAMENTAL STONES OF IRELAND.*

FIFTH NOTICE—conclusion.

MISCELLANEOUS.

In concluding our notice of Professor Hull's useful volume, we shall once more make it a peg to hang upon some remarks of our own in connection with the labours of others. By way of exciting a curiosity rather than affording essential information, we will begin by giving a summary of the principal petrifications met with in the County Dublin by the Quaker naturalist, Rutty, in the last century. These vegetable, animal, and mineral petrifications, we may remark, are common to several counties in the island.

In Dublin he mentions moss petrified from springs of water slowly dripping down; 2. *Lapides Fangoides*, or *Lapides Fungiti*, otherwise mushroom stones—a kind of fossil coral, according to some authorities; 3. *Coralloides Stalagmites*, akin to *osteoecolla*, found in large rocks by the river side between Castlekelly and Old Bawn, and used in an ornamental way for walls and door-cases of several of the ancient churches; 4. *Lapis Stelechites*, a stone bearing a resemblance to the roots of trees; 5. *Lapis Vermicularis* presenting the appearance of worms petrified. According to Hill, who wrote in the last century, these petrifications are "corals composed of longitudinal pieces of the figures of several worms ranged in a mass in parallel lines." 6. A petrification presenting the form of a bundle of asparagus petrified, termed by Hill *Junci Lapidæi*; 7. petrifications having branches of plants delineated on them. Of animal petrifications met by our county naturalist were the following:—*Asteria* or *Astroites*, i.e., star stones; *Bolemites*, or the thunderbolt, placed sometimes among the minerals; *Ducinta*, petrified whelks; *Ammonites Lapis Cornu Ammonis*, vulgo, serpent stones; *Cochlea Petrifacta*, petrified snails; *Echinus Marinus Petrifactus*, sea hedge-hog petrified; *Entrochi*, a petrification reckoned to have been the joints of the star-fish; *Lapis Judaicus*, reported to have been found in a quarry at Raheny, supposed to be the spines of the *echinus marinus* petrified; *Lapis Mytilites*, the petrified muscle found on the sea shore at Howth; *Lapis Ostracites*, petrified oyster-shells; *Paletta Petrifacta*, the limpet petrified; *Pectunculus Petrifactus*, the petrified cockle; *Lapis Pectinites*, the petrified scallop; *Perla*, the pearls found in Poolbeg oysters in Dublin Bay; *Trochita*, a petrification described as representing a boy's top, "said to be the attritions detached from the vertebrae of the back of a sort of sea worm, in the form of a wheel, hollow in the centre." Among the mineral petrifications, so called, mentioned as being met with by Rutty, are—1. Limestone gravel; 2. Mill-stones; 3. A kind of

* "A Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries." By Edward Hall, M.A., F.R.S. London: Macmillan and Co.

rock marl, a petrification resembling artificial plaster, but harder, met with on the north side of the Liffey, on a bank near Knockmaroon, and on the banks of the Dodder. When broken it presented a white appearance, effervesced strongly with acids, and burnt to a lime. 4. Petrifications or stony incrustations, to a great extent formed by dripping water among the rocks, were met with in a cave on the sea shore near Portrane. A petrifying spring is mentioned to be existing here. Several white stony incrustations were found on the rocks, which effervesced with acids, and burnt to a strong lime, first burning to a blue and purple colour, from the sulphur they contained. *Lapides Stalactitii*, stony icicles or drop-stones found at a quarry near Lucan, and in caves on the north-west shore of the Hill of Howth. The most of the above petrifications are of a calcareous nature, and will burn to lime; there are, however, others which will resist the action of acids or even the strongest fire.

We will now come to the more useful building materials of this country which we have not already touched upon at length in our previous notices. Clay slate, according to Professor Hull, is "a sedimentary argillaceous rock generally compact and fine-grained, of colour varying from grey to purple, green, and even black, and splitting along planes of cleavage which only accidentally coincide with those of bedding." The importance of slate in the British Islands as a building and sanitary material cannot be questioned. There are many uses to which it can be applied besides for roofing, and of late years it has been superseding lead and wood in the construction of cisterns for holding not only water but other liquids. It is also used as a substitute for marble in the manufacture of chimney-pieces, which it answers tolerably well. It is susceptible of a passable polish, and for a cheap class of houses it is preferable to wooden chimney-pieces stained and varnished. In this country, where marble is plentiful, if it can be afforded it should be always used to the rejection of slate, no matter how good its quality. The palæozoic formation, from the Cambrian down to the carboniferous, yield cleaved slates in the British Islands, though on the continent it is different, for there the mesozoic and tertiary periods present the phenomenon of cleavage. The slate that comes from North Wales is a firm and extensively used material; but of late years some very good slate has been quarried in this country. The old kind of slates—still used, though superseded to a great extent—were more of a tile stone than a slate. They were derived from the upper silurian, the carboniferous, and the oolitic formations. Their thickness and consequent heaviness necessitated high-pitched roofs to relieve the weight; but, so far as high roofs were a necessity, their height, as an architectural effect, was unobjectionable. Flat roofs, or roofs with very little pitch, are now constructed, and, though a saving of timber and slate is accomplished, very little can be said in favour of the innovation.

Slate is a most dense material—the most dense of our stratified sedimentary rocks. Of some of our best British varieties, one cubic foot is said to weigh from 170 to 180 lbs. The Killaloe slate—a really good description of our Irish slate,—according to Mr. Wilkinson, in one case required a crushing weight of 80,780 lbs. to one cubic

inch, whilst the average crushing weight was about 20,000 lbs. There are at least six counties in Wales where there are large quarries of slate, Merionethshire and Carnarvonshire containing the greatest number. Many of these quarries supply large slabs as well as the ordinary slabs; and some of the quarries in Carmarthenshire and Pembrokeshire supply a building stone in connection. Throughout England and Scotland there are several quarries where good roofing slates are obtained. From Westmoreland and Cornwall some very good slates are imported to this country.

The principal quarries in Ireland are Killaloe, Co. Tipperary; Valentia, Co. Kerry; Benduff, near Glandore Harbour, Co. Cork; Carrick-on-Suir, Ashford Bridge, and Rathdrum, Co. Wicklow. The Killaloe slate belongs to the lower silurian rocks. "These quarries," says our author, "lay open a vertical section of over 350 ft., and produce slates from 10 ft. square downwards, of a dull bluish grey colour, and of good quality, though somewhat rough." The Valentia slates are somewhat similar to the former, and are obtained from the Devonian series. They are greener in tinge, and are not considered as good in quality. They do not split as evenly as the Killaloe variety, but the quarries yield some good flagstones, applicable for tanks, cisterns, baths, &c., and for such uses are exported in large quantities to England. At Clonakilty, south-east of the County Cork, there are quarries which yield good roofing slate; and also at the old head of Kinsale there is to be found good roofing slate, and, according to Sir Robert Kane, they are "exceedingly light and durable." The Ashford Bridge slates resemble those of Bangor, in Wales, while those of Carrick-on-Suir are said to be like those of Keswick or Penrhyn, "being smooth, of a light green colour, and of excellent quality."

We are of opinion that there are large formations of slate not only in the west and south of Ireland, but also in the north and east. Professor Hull says:—"Amongst the lower silurian rocks north of Hillary Harbour, and along the valleys of the Erriff and Doo Lough, Co. Mayo, are certain beds which, if opened up at sufficient depth, might be found to produce excellent pale grey or bluish roofing slate; and to this district I venture to direct the attention of capitalists." We cordially back the Professor's recommendation, and we hope his suggestion will be acted upon. We also would advise a series of experiments north and south of Dublin. Slate has been quarried upwards of a century ago in the County Dublin, though not of good quality; but possibly another search would discover some good beds. If not suited for roofing slate, they might be found serviceable for other building uses already alluded to. The County Dublin, we know, yields a number of slaty stones, and these have been used for two or three centuries back for flagging and tiling purposes, and even for rough roofing uses. On the mountains south of Dublin, south-west of Rathfarnham, and extending on to Blessinton, there is a large tract of country which yields slaty stones. On Barneslingan, at Friarstown, at Bullock and Dalkey, there are inferior kinds of slate, used formerly for rough roofing purposes as a substitute for tiles. The Hill of Howth, Ireland's Eye, Portrane, and other places adjacent, have red and grey slaty rocks; and near Palmerstown there is

a black slaty stone. The nearest approach to a useful slate already known in connection with Dublin and Wicklow are those slaty stones formerly quarried in the neighbourhood of Dunlavin and Blessinton, and at Dowlingstown, on the borders of Dublin and Kildare. During the last fifty years very little of these descriptions of slaty stones have been used for building purposes.

We have, however, in the County Dublin, as well as in other counties, a quantity of what is called ragstone—a useful material, well known to building operatives and other craftsmen using edged tools. Ragstone is used extensively by joiners and other workers in wood as an "oil stone" for putting a sharp and keen edge to their chisels and plane-irons. Ragstone is to be found along the banks of the Dodder, at Old Bawn, and at Castlekelly. It is a glossy stone, and generally grey in colour, though sometimes of a dusky red. There are other districts also in Dublin where it is found.

Our Irish slate has its use as a source for the supply of vitriol. It is scarcely necessary to allude in these articles to the presence of iron stone and iron ores, and other ores in connection with our building stone, although of late years iron has become extensively used as a building material. Several of our counties yield iron ore, copper, lead, &c., and in Dublin several quarries were worked formerly which yielded these materials.

Of ochres and painting earths we have a fair supply throughout Ireland, but the resources are not developed. Three or four descriptions of ochre of varying colours are to be found in Dublin, and we think it is a great pity that mills are not erected for separating and washing our ochres. Our *Lapis Hibernicus*, a description of rotten stone, yields alum and vitriol; and in the County Dublin there are several descriptions of rotten stones, exclusive of the *Lapis Hibernicus*, could be utilised as a source for supplying a variety of useful articles—stones to polish brass, copper, iron, silver, wood, and other stones. Some of these stones were exported to London in large quantities in the last century. These useful stones are of various colours—dark brown, pale brown, with red streaks, snuff-coloured, black, and yellow. In connection with some of our quarries of black building stone, there is to be found a black earth. It has often been used for writing and drawing, sometimes in painting, and also for a kind of black chalk for marking sheep. Some of these rotten stones would make a good dye for colouring, and, used in connection with a good mordant for fixing the colours, would, we think, be found to answer.

Brick clays and clays for tiling and pottery purposes exist plentifully throughout several counties of Ireland, yet are very sparsely utilised. There is also any quantity of clayey, slate, and sandy marls well worthy of the attention of farmers as a substitute for stable manure. Shells on our sea coasts exist in large quantities; and these are worthy of attention, for, whether burned or unburned, they afford a good manure in stiff and boggy soil. Sea sand, though not to be recommended for building uses, yet it is most useful for several kinds of lands, from its admixture of shells. There is no lack of foundry, casting, and building sand in Ireland; the County Dublin alone, north and south, yields a variety.

Neither our architects, builders, farmers,

nor manufacturers as a body have given the least attention to our native building resources; nay, more, there has not been wanting several who have laboured to decry their existence while asking the patronage of their countrymen to aid them in importing materials from the Continent. It was fashionable of late years to do so, and it is still fashionable, and so much the worse for the professionals, their country, and their patrons.

We leave untouched the review of the building and ornamental stones of foreign countries treated so ably in Professor Hull's work. Those who desire to be informed in these matters had better consult the volume, which will be found to repay them their trouble. We have pretty well exhausted the subject, so far as related to this country, as treated by Professor Hull; and we have enumerated several other building and useful materials not mentioned by our author, deeming it a duty, and leaving it to our readers and countrymen to appreciate our task for what it is worth in their interest and that of the common weal of the island.

ARCHITECTURAL CRAFTSMEN AND DRAUGHTSMEN.

DISINCLINED as we are to take part in the fog-end of any professional controversy, we cannot pass over in absolute silence the very bitter and, we must say, unjust (in our opinion) attacks upon one of the late competing architects in the designs for the new Edinburgh Cathedral. His design has been accorded a second place, Sir George Gilbert Scott having been awarded the first prize. Mr. Ross, who hails from Inverness, is, we presume, a Scotchman by his name, and Scotchmen are generally able to take their own parts. As a people, Scotchmen have been credited with extra shrewdness, and a desire to claim every great name, project, or reputation at all in any way hanging on to their country by even accident, as a Scotch emanation and greatness *per se*.

This aside: in the present case, from what we have seen from the public controversy, we think Mr. Ross is what is commonly termed a badly-used and grossly-abused architect. If architectural assistants are in future to claim the designs upon which they are employed to fill in with details as their own, clerks of works and foremen of works can as well, with as much, yea, even more, right, claim the carrying out of the architect's designs into a practical embodiment in stone or wood—their work. The ordinary clerk of works or foreman of works is generally a craftsman as well as a draughtsman, and, as such, he knows the theory and the practice. He suggests, in concert with the builder, a desirable alteration, and can see in his mind's eye the appearance that the work would have if carried out. Difficulties are often foreseen by the practical craftsman before the work is executed, and hundreds of pounds are saved betimes by a little judicious departure from the original plans or in its details. He does not claim on that account, nor does the master builder, that he is the author of the design, though he might often make a more valid claim to authorship than any mere architect's assistant or colourist.

If the confidence that has existed and ought to exist between architects and their assistants is to be broken, so much the worse for the rising generation of the profession, who cannot spring like mushrooms at once from a region of eclipse into a region of light.

The modern practice of architecture in London and the chief cities of Great Britain has rendered it necessary for popular architects to procure assistance. Some architects get more business to do than they can accomplish. How are they to act? Take any other walk of life. How do persons who have to attend to the wants of a large circle

of customers act? Do they tell their customers to go over the way, or do they rather increase their assistants, or enlarge their concerns? There may be, and there is indeed an evil in the modern practice of the profession where the work is too much for the principal; but the remedy has only one safe application. If a really superior assistant renders essential aid, and supplies ideas as well as labour, it is a fair question whether the architect should not acknowledge to some extent the assistance that he receives. When the work is an important and successful one, good assistance should be well remunerated. Popular architects' offices are normal schools of architecture, and their assistants are but students either learning or improving upon their art. When the moment arrives that the assistant thinks he can walk alone, *i.e.*, commence to practise on his own account, by all means let him cut the bearing rein and exhibit his own prowess and capacity at large. On the other hand, if the architect thinks his assistant is indispensable to his office, and that he cannot very well do without him, he ought in such instance not hesitate in giving a share in his business, in partnership or in reputation.

There is a great deal to be said upon both sides, but we must conclude for the present, and we do so by again reiterating our opinion that Mr. Ross has been badly used, and has been the victim of professional jealousy and violent unthinking and unjust architectural criticism.

"THE WORK AND THE MAN."*

I know the man full four-and-thirty years,
Whose pen-drawn pictures ever kept in view
"Another Blow for Life"; and, as he nears
The winning-post, the world must know him too.
His task to throw, by "London Shadows," light
On crowded alleys, where the working poor
Prolong the weary day, by cheating night;
To keep the wolf outside the dismal door;
To indicate the baneful haunts which bear
The fruitful seeds of pestilence and crime;
To visit squalid homes of strife and care,
And weave from lowly welf a web sublime;
To shew the "upper ten" they owe their wealth
To sons of toil, as Auburn's poet told;
And teach the statesman aught that pilfers health
Taps every spring, which labour turns to gold;
To prove to malcontents the primal curse
On our first parents, when from Eden driven,
Becomes, if well applied, the only source
Of peace on earth and happiness in heaven.
To life devoted to the common weal—
If life protection be a noble aim—
A grateful nation should be proud to seal,
With marks of signal honor, "Godwin's" name.
Dublin. G.

MADAME DAVIEZ—MUSIC AND CRITICISM.

IN this city, where all art, particularly if it be indigenous, receives but scant encouragement, it becomes our duty, having the true interests of art at heart, to notice every commendable effort, and award it that meed of praise to which it is fairly entitled. The subject of this brief notice has now been toiling single-handed up the rugged hill of public favour for eight or nine years. She has built for herself a concert-room, in which she has erected an excellent organ, built by our fellow townsman, Mr. Brown. She has not only catered but retained, the best vocal and instrumental talent that the city can procure. She is a musical Frankenstein in one sense, for she has created a something that she does not by any means desire to flee from; but unfortunately the baby house she has erected for the infant is totally inadequate to accommodate what should cease to be called the "Juvenile Philharmonic." It has come to this, that Madame must either

build a larger concert room, or give her concerts in future in some more capacious public concert room, where we very often hear far worse music than that which we heard a few nights ago. We do not care to criticise amateur solo singers, except when really deserving; so we begin by saying, and we may safely say it, that the choruses we heard were excellent, and the band super-excellent. Madame Daviez should be deeply indebted to her organist, Dr. Crosthwaite, who appears to be the guardian angel of amateur frailties, weaknesses, and wanderings, to judge by his judicious strengthening of weak leads in the chorus, and his emphatic reading of dubious passages in the instrumental performance.

We cannot pass over in silence the criticism of the critic in one of our contemporaries. Speaking of the music set by Haydn to the sublimely, simply beautiful, first two or three verses in the Bible—the first episode in the epic of all epic poems, "The Creation"—remarks that at the words, "Let there be light,"—"This was made artistic by the blaze of gas light bursting out." Could there, we ask, be a lower profound of profanity than this? The critic, no doubt, considers he made a "happy hit" when he was manufacturing his "copy" in the small hours of the morning. Such pantomimic criticism is really intolerable and despicable. Let us hope that this turning on of the gas at this particular point was an accident, and let us hope also that the same accident may never occur again. Better that there should be no notice or criticism at all, than our press should show their rotten parts. The reputation of a journal, like the strength of a girder or column, is only equal to its weakest part. Our newspaper proprietors and editors ought, therefore, be careful. Flaws such as we have noticed are a danger, and a danger should be avoided and its cause removed at once, for the credit of the city and the honour of honest criticism.

LECTURES ON IRISH MUSIC.

SIR Robert Stewart delivered his fifth lecture on Irish Music on last Saturday afternoon, in the Examination Hall of Trinity College. There was a large and most appreciative audience. The lecturer treated of several ancient Irish and other musical instruments, their antiquity and shapes. He next described the various styles and descriptions of music alluded to in Irish MSS. Some illustrations of Irish music were sung by students. The lecture of this evening will be the last of the series.

THE ROYAL IRISH ACADEMY.

At the last meeting of the Royal Irish Academy, held at their rooms, Dawson-street (Lord Talbot de Malahide in the chair), the President, Professor Jellett, read an interesting and instructive paper on "Sugar Beet grown in Ireland," and the manufacture of sugar. Professor Sullivan, the chairman, and others, took part in a discussion arising therefrom. The thanks of the Academy were given to Professor Jellett for his paper.

Mr. O'Donovan, LL.D., presented the Academy with several ancient smoking pipes, found in Ireland, some of them bronze, and one bearing the rose and crown of the Tudors, being evidently of the Tudor period; and also a charter, granted by James II. to a person named Daly, of lands in Westmeath.

Professor Sullivan handed in several volumes, presented to the Academy by Professor Corragini, including an Italian translation of the "Vision of the Irishman Tundal," which, Professor Sullivan said, had already appeared in almost every language in Europe, and yet—with other similar specimens of early Irish literature—was almost wholly neglected in Ireland. It was a curious fact that the inspiration of "Dante's Inferno and Purgatorio" was drawn from five sources, three of which were Irish—namely, "The Vision of Tundal," "The Voyage of St. Brendan," and "The Purgatory of St. Patrick."

A member stated that there existed in Trinity College Library a perfect copy, in Irish, of "The Vision of Tundal."

The President announced that at the next meeting on the 16th of March, the Cunningham Fund Medal, adjudged to Sir W. Wilde, would be presented to him.

The Academy then adjourned.

* See page 39, No. 315.

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

AGHADOE.

THE remains connected with this place stand on a bare eminence about two miles from Killarney, which commands a fine view of the lower lake. They consist of a stump of a Round Tower; the ruins of an ancient church, dignified with the name of the Cathedral; and the base of a circular tower, locally named the Bishop's Chair. The original church, according to Smith, was dedicated to St. Finian. Aghadoe is stated to have been a bishopric, of which, however, there are no records. It must have been united to Ardferd at some remote period, as Ware states that in A.D. 1588 Nicholas Kenan was appointed "Bishop of Ardferd and Aghadoe."—(Ware; *Bishops at Ardferd*.) Smith states that "the cathedral church of Aghadoe has been in ruins time out of mind; the only dignity belonging to it is the archdeaconry."—(Smith; *Kerry*, p. 68.)

The name of this place has been a subject of some controversy. Smith, p. 147, states that it was anciently called "Aghaboe, i.e., Campus Bovis"; this, however, is not the fact, as we shall presently see. The late Mr. John Windele writes:—"The name of Aghadoe, according to Vallancey, is referable to its ancient Druidic occupation, indicating that there a sacred fire,—a fire of fires,—had burned and been worshipped; the word *agh* and *dogh* both signifying fire. This, connected with the remains of the *Tur-aghan* (i.e., tower of fire) still standing here, illustrates the use of the tower in a sufficiently remarkable manner. It will not in the least invalidate its force to suggest that the name may, with equal probability, be formed of *Achadh-doe* (i.e., the field of the fire),—such at least is its orthography in the *Annals of Innisfallen*."—(Windele; *Notices of Cork and Killarney*, p. 387.) All these ingenious speculations, however, must give way before the authority of the *Annals of the Four Masters*, who name this place *Achadh-da-eo* (see index nom.), i.e., the Field of the Two Yew-trees. This orthography of the name is in truth confirmed by the *Annals of Innisfallen*, though Mr. Windele draws a contrary conclusion.

Historical notices of this place are, as usual, very few and meagre. Mr. Windele has given the following from the above-named annals:—

"A.D. 1010.—Maolseachlan, the son of Carroll, king of the Eoganacht Loch-lein, and chief prophet of Ireland, died at Aichede.

"1044.—O'Cathal, the next in succession to the king of Loch-lein, is taken from Achiddeo and slain.

"1158.—The great church of Achadeo, on the verge of Loch-lein, was finished by Auliffe, the son of Aongus O'Donoghue, and the lordship and immunity from tribute of Loch-lein confirmed on him and his posterity. The same Auliffe was soon after treacherously slain by Muircertagh McToirdealbach O'Brien, on his becoming king of West Munster. His sons and people bore his corpse to Achadeo, and interred it honourably, after many masses and much psalmody, in the church he had himself erected. It was in honour of the most holy Trinity that church was consecrated.

"1177.—Cork was taken by Milo de Cogan and Fitzstephen, after which both go on a pilgrimage to Achadeo, where they remain two days and nights, and then return to Cork.

"1281.—Aodh, or Hugh McConnor McAuliffe mor O'Donoghue, king of Loch-lein, dies, and is buried in his own tomb, in the Abbey of Achadeo. This passage in italics Archdall omits, and substitutes without the smallest authority the words, 'in his own old abbey.'—(Windele; *Notices*, &c., p. 388.)

The only other reference which I have been able to find respecting this place is one

from the *Annals of the Four Masters*, at 1681, which, being a characteristic picture of the times, I here quote:—"The Earl of Desmond was encamped at Achadh-da-eo; and at that time an English captain, namely, Captain Suittse, was appointed by the Queen and the Lord Justice to preside over Desmond and Kerry. This captain marched day and night with a party of cavalry to make an attack on the camp of the Earl of Desmond; and it was on a Sunday morning he arrived at the camp. The Earl and all those who were with him were at this time buried in deep sleep and profound slumber, for they had remained vigilant and on the watch all the night, (and) until that time. The captain immediately and alertly attacked all those whom he found standing in the streets, and slew them without mercy; nor did he wait for battle or engagement, (but proceeded directly) till he reached Castlemain. The following were among the free-born persons slain by the captain at Achadh-da-eo on that day, i.e., Thomas Oge, the only son of Thomas the son of Maurice Duv, son of the Earl; Mulmurry, the son of Donough Bacagh, son of Mulmurry, son of Donough Mac Sweeny; and Teige, the son of Dermot, son of Cormac of Magh Laithimh."

In a note to the above passage Dr. O'Donovan renders *Achadh-da-eo* the Field of the Two Yews; and in another he states that *Suittse* is an attempt at writing in Irish letters the name of Zouch. This Captain Zouch was a well-known leader of the English in the reign of Queen Elizabeth.

THE ROUND TOWER.

This structure stood on the verge of the cemetery, being, like several others of its class, partly within and partly without the boundary. At present but a stump remains, of from 10 ft. to 16 ft. high, which has been almost denuded of its masonry facing, which consisted of blocks of dressed sandstone, well fitted, but not in regular courses. The internal lining is of similar workmanship, but smaller material, dressed concave to the inside curve, the body of the wall being filled with rubble stone and a strong coarse grouting. The doorway has disappeared, and must have been above the height of the present stump. Its internal diameter is 7 ft.; thickness of walling, 4 ft. 6 in.; lower down, its circumference at the base is 52 ft. It stands 60 ft. from the N.W. angle of the Cathedral.

THE CATHEDRAL.

The church, or, as it is commonly called, the Cathedral, is a simple rectangular building, 82 ft. in length and 21 ft. in breadth, clear of walls. There appears to be three dates of masonry in this structure. The north-west corner, partly on the west gable and partly on the north wall, appears to have belonged to a primitive church, portions of the walls of which had been preserved and incorporated with a later building. The masonry of this portion was composed of large blocks of stone, of irregular forms, fitted with occasional spawls. The rest of the west end, for a length of 85 ft. or thereabouts, appears to have been a reconstruction of the twelfth century, being built of smaller but more regular masonry; a small portion of this only remains, close to the left jamb of the western doorway. The eastern end is thirteenth-century work, the masonry rude rubble, the stones small.

The west entrance appears to have been originally a very beautiful feature; it is at present much mutilated. The external member of the arched head has disappeared, with the exception of four stones; the principal part of the external label is also gone. The ornamentation on the surface of the pillars is nearly worn down, but quite sufficient remains to determine its character. The jamb is composed of an external pier, which projects from the face of wall; next, an angle pillar, 5½ in. diameter, with carved capital. The bases are sunk below the present level of ground, and are defaced. The surface of the shaft of that on the left

is carved into chevrons with rows of pellets between; that on the right into spiral cabling, with the same ornament between the cables. The next member is a shallow pier carved into a double embattled ornament, of a very unusual but effective character. The inside pier is plain. The head is composed of an equal number of arch-members: the external one is a line of chevron blocks, the faces charged with incised ornament; the next is moulded on the arries, and enriched with a line of balls, with bands of small pellets between, the soffit being similarly finished; the next is a line of chevron blocks, acutely pointed; the inside member is plain; the entire is enclosed by a bold label moulding with the ball enrichment. The accompanying lithograph shows this beautiful doorway with its damaged parts restored. It is 2 ft. 10½ in. wide at sill, 2 ft. 8 in. at springing of arch, and 5 ft. 4 in. high to top of abacus of pillars. This abacus—a square and chamfer—crowns all the jamb members.

Two of the original window-opes exist in the western end; they are exceedingly narrow, being but 6 in. wide at bottom and 5 in. at top, with semicircular heads and large inward splay. The eastern end appears to have been an addition of the thirteenth century, the east gable being lighted by a pair of lancets, 6 in. wide and 9 ft. 6 in. high on the outside, and having large inward splay. A wall at present runs across this church, dividing it into two unequal parts, in which is a door and window-ope. It does not bond into the side walls. The doorway has a pointed rubble arch.

At some distance from the church, and outside the cemetery, is a circular tower, built of rude rubble-work—the stones principally large pebbles and boulders. It is about 20 ft. in diameter; the walls 6 ft. thick. It is locally known as the Bishop's Chair, but was certainly a defensive structure, the age of which we have no data for conjecturing.

The date of the original church it is impossible to determine, but the first reconstruction or enlargement is evidently that mentioned in the *Annals of Innisfallen*, by Auliffe O'Donoghue, one of the chiefs of Loch-Lene, in 1158, as already recited; and there can be no manner of doubt but that this doorway was a portion of the work stated to be finished in that year. Here we have another evidence that the Irish were not indebted to their Norman invaders for this style of architecture, but that it had been introduced into our island and brought to a high state of perfection long before that conquering race had set a foot on our shores.

KILMACDUAGH.

Among the sacred places in our island bearing the reputation of "Seven Churches," Kilmacduagh is not the least remarkable. Though we cannot at present trace the mystic number of sacred edifices, sufficient remains to warrant us in concluding that the tradition was not without foundation. This was an ancient bishopric, supposed to have been founded by Colman-mac-Duach; there can, however, be no doubt that he was the builder of the first church in this place, which afterwards became episcopal. Colman was the son of Duach, and was related by descent to Guaire, surnamed the Hospitable, king of Connaught in the seventh century. This relationship is thus given in the *Book of Lecan*:—"Guaire, the son of Colman, son of Cobhthach, son of Goibhneann, son of Conall, son of Eoghén Aidhne, son of Eochaidh Breac, son of Dathi, had three sons, viz., Artgal, Aedh, and Nar. This Aedh had a son Fergal; Fergal had two sons, viz., Cormac, and Enda a quo Cinel Enda. The issue of Cormac became extinct except one daughter, Righnach, the mother of St. Colman Mac Duach, a quo Ceall Mic Duach, i.e., Kilmacduagh."—(*Hy Fiachrach*, by Dr. O'Donovan, p. 61.)

Dr. Lanigan gives the following account of St. Colman:—"The earliest account I find of his transactions is, that he lived as a hermit in the forest of Burren (County of Clare), attended only by a young clerk, a

disciple of his. Their only food was water-cresses and wild herbs; their drink, water; and deer-skins served them for clothes. Having constructed an oratory and a small habitation surrounded with trees, they remained there for full seven years without conversing with any other person. Colman's reputation becoming very great, he was taken notice of by Guaire, a prince of great piety and liberality, who offered him as much land as he should wish for the establishment of a religious community. The saint refused to accept of more than a small plot, on which he afterwards erected a monastery, and where he became bishop. It was not far distant from his former habitation, and has been called from his name, *Kill-macduach*. This foundation took place in the early part of the reign of Guaire, and probably before the year 620. After a well-spent life, St. Colman died on a 3rd of February, but in what year is not recorded."—(*Eccol. Hist.*, vol. ii., pp. 841, 2.)

The above account, principally taken from Colgan's *AA. SS.*, does not square with the pedigree given in the *Book of Lecan*. According to the latter authority, St. Colman was the great, great, grandson of Guaire Aidhne, while the former makes him contemporary with that monarch, whose death is recorded by the *Four Masters* at A.D. 662. Either the pedigree is false, or St. Colman must have lived a century later than the period usually assigned to him. These discrepancies I will not attempt to clear up; for my present purpose it does not much signify whether he flourished in the seventh or eighth century.

At A.D. 814, the *Four Masters* record the death of "Innrechtach, Bishop of Kill-Mic-Duach." A.D. 846, we find the following:—"Colman, son of Donncothaigh, successor of Colman, of Cill-Mic-Duach, died." At 1098, we find a record of the death of "the successor of Colman of Cill-Mic-Duach," whose name is not given. Ware has a list of eighteen bishops of this see, down to Rowland Lynch, who succeeded to the episcopal chair in 1587. In 1602 it was united to that of Clonfert, under the same prelate, who died in 1625.

Our historic annals contain but a few unimportant notices of this place, but no information respecting its ecclesiastical buildings.

The present remains are situated in a bare and desolate-looking spot, stony and sterile, without a tree to relieve its nakedness. They consist of a Round Tower; the ruins of the Cathedral; of the churches named Temple Iun, Temple Muire, Temple Mac Duagh; and a building of a secular character called Shanaclogh; the sites of Temple-beg Mac Duagh, and the Leabha or grave of Mac Duagh, with his Sacred Tree and Holy Well. These all stand in one spot, on the townland and in the parish of the same name.

THE ROUND TOWER

Stands about 40 yds. W.S.W. of the Cathedral. It has a plinth of 7 in. projection; the base to the height of about 12 ft. is built of large blocks of roughly-dressed stone, closely fitted, and interlocking one with another in many instances. One of the blocks measures 8 ft. in length by 2 ft. 5 in. in height, another 5 ft. by 2 ft. 4 in., and so on. The general masonry is of a very superior class of rubble-work, the stones partially dressed, and few spawls used;—this is its character to the sills of the attic windows, from whence, upwards, the work is of a very inferior description, and the material small stones, many of them like boulder paving material.

It is stated that the conical roof was in existence ten years before my visit, in 1869, about which period, I was informed, it fell, carrying with it a large breach out of the south side, and also causing a split down that part of the tower to the extent of some 40 ft. from the top. This tower leans considerably out of the perpendicular; it has been stated by Archdall (*Monast. Hiber.*) that this overhanging was to the extent of 17 ft., exceeding that of the celebrated leaning campanile at Pisa. This statement has been repeated by several writers; it is, however,

a very great error. By the most accurate observation I could make, the overleaning is about 2 ft. 4 in., which is quite enough in all consistence. This has been caused by the subsidence of the foundation on that side, which is also quite evident by the fractures in several of the stones in the base of the structure, on the same side.

The doorway faces E.N.E.; the sill is 26 ft. from the ground, being at the highest elevation of any of our Round Towers. It is built of heavy blocks of squared ashlar, and is semicircular-headed. It is 2 ft. 10 in. wide at sill, 2 ft. 7½ in. at springing; its height to soffit of arch, 6 ft. 10 in. The arched head is formed of three stones. The wall of tower is 4 ft. 4 in. thick at sill; it is 59 ft. in circumference above the offset. There are five window-opes placed at various elevations; they are of small size, are all angular-headed externally, and square-headed internally, built of squared ashlar, and with sloping jambs; they are placed at the N., W., and S., one over the doorway, and the fifth, of the same form, at the west side, under the attic storey. There are at present four windows remaining in the attic; they are of the usual size, and angular-headed, but the dressings are much inferior to the other opes; from the spacing of these, they must have been six in number, as the extent of the breach would afford room for the missing two. This part of the tower is most certainly a reconstruction, as I before remarked. From the sills of the attic windows, upward, is of very inferior materials and workmanship, as also are the window-opes; this, coupled with the unusual number of the opes, evidently points to a period when the upper storey was adapted to the purposes of a belfry, probably ages after its original construction. Dr. Ledwich gives the height of this tower as 110 ft.; it certainly was one of the loftiest of its class. He states the circumference as 57 ft.; his measurement was probably taken at a higher level than mine.

CATHEDRAL.

The Cathedral consists of a nave and chancel with transepts. The nave is 70 ft. in length and 22 ft. 7 in. in breadth. There is incorporated in it a portion of a church of the primitive type, as is evident from the masonry of the west gable and a portion of the side walls, which are of large material, rather polygonal in character, and closely fitted. In this gable is a doorway of the ancient type, 3 ft. 2 in. wide at sill, 2 ft. 6 in. at head, and 6 ft. 6 in. high; the jambs are composed of large blocks of dressed ashlar; the lintel is a large slab, 5 ft. 9 in. long, 8 ft. broad, and 1 ft. 9 in. high on external face. In the north wall of nave is a small angular-headed ope.

This church appears to have been nearly rebuilt in the fifteenth century; the principal part of the nave, the transepts, and the chancel appear to have been of this period, as is evident from the difference of the masonry and other features. In the north wall of the nave is a pointed doorway with a good moulded jamb and label. The chancel-arch is semicircular, with square jambs and head, no moulding or chamfer, and is evidently modern. The chancel is in length 26 ft., and in breadth 22 ft. 7 in. The east window is of three lights, of the usual type of the fifteenth century, the mullions simply crossing each other without cusplings. There is also a small two-light window in north wall, and a sacristy at the south side; there are neither sedilia nor piscina.

The north transept is in length 25 ft. 4 in., and in breadth 22 ft. 7 in.; it has a good decorated three-light window in north gable, and a two-light one of the same character in the east wall. The south transept is in length 22 ft. 1 in., and in breadth 24 ft.; it is much dilapidated. The transepts were connected with the nave by pointed arched opes; that at the south side was built up, and a doorway inserted.

There are at present no windows in the nave, excepting a rude rectangular ope in west gable. There is, however, a large breach

out of the south wall, where probably there had been one or two opes.

TEMPLE IUN.

This interesting church, as its name imports, was dedicated to St. John the Baptist; it is so marked on the Ordnance map. It stands a short distance north of the Cathedral, and at present consists of a nave and chancel; the former appears to be almost entirely a reconstruction, and has a late pointed doorway at the north side. There is, however, a small portion of the wall of the original nave at the north side, shewing a different and superior class of masonry. The chancel-arch no longer exists, but its richly-finished piers, of transition character, remain; these piers are 3 ft. 6 in. thick, each having three engaged shafts, with moulded bases and richly-sculptured capitals. The clear width of the ope was 13 ft. The stonework is beautifully wrought, of hard limestone, and is quite sharp and fresh.

The east window is of two lights; these are semicircular-headed, are but 8½ in. wide at sill and 6 in. at springing, and are 8 ft. high to soffit of heads; they are richly moulded on the external reveals; they are set very widely apart on the outside, but, owing to the great splay of the jambs, the centre pier runs to an angle inside. The internal jambs are richly moulded, the mouldings running under the sills and round the arches; the principal member is a bold torus, which on the jambs and centre pier is treated as a pillar, and has a carved capital; outside of all is an additional torus, which is treated in a similar manner, the shafts supporting a label moulding of similar section. The workmanship of this window, like that at Clonfert, which it much resembles, is of the finest character, clean and sharp, the ashlar facing of the jambs finely worked, and the joints wonderfully close, the stones in several places interlocking.

In the south wall is a tall single light, 6 in. wide externally, splaying to 4 ft. wide internally; it rests upon a chamfered string, and has plain chamfered impost and hood moulding internally; though of plainer character than the east window, its masonry is equally well finished.

The masonry of the chancel is remarkably well executed, the stones of large size and of all shapes, but well jointed; the quoins are finished with quoin-shafts, as at Tomgraney, Monaincha, Clonfert, and Temple-na-Hue at Ardfer, and have moulded caps and bases.

TEMPLE MUIRE.

Temple Muire, or Mary's Church, lies east of the Cathedral, the public road running between the two buildings. It is a simple nave, 41 ft. 7 in. long by 19 ft. broad, in clear of walls. The masonry is of smaller material than what I have been describing, but it is carefully executed, being a superior class of rubble work. The west gable is down to the level of the side walls.

The doorway is in the south wall, and is semicircular-headed, but of plain character. The east window is but 7 in. wide outside, and 4 ft. inside; the head is very slightly pointed. There is also one window-ope in the south side, 8 in. wide externally and 5 ft. internally; the head is gone. The dressings of door and windows are of hard limestone, and are finely cut and jointed.

To the west of the Cathedral about 40 yds. are some trifling remains of a primitive church, known as St. Mac Duagh's Chapel, consisting of a portion of the south wall of the nave and some bits of the chancel. The masonry is of large-sized rubble-work, of similar character to the old work of the Cathedral. In the portion of the nave wall still standing are two window-opes, one angular and the other semicircular-headed, being 8 in. wide externally, with sloping jambs and large inward splays.

About 100 yds. south-west of the Cathedral is the site of a church named Teampul-beg-Mac Duagh, i.e., the Little Church of Mac Duagh; its foundations only remain. The decaying trunk of a tree, locally known as

St. Mac Duagh's Tree, stands near the Round Tower. Fifty perches south-east of the Cathedral is Tubber Mac Duagh, i.e., the Well of Mac Duagh; it is close to an angle of the road.

Forty perches north-west of the Cathedral are some remains of the Monastery of Regular Canons of St. Augustine, erected by Maurice, a bishop of Kilmacduagh, who died in 1283. Archdall states, upon the site of an older church.

At some distance south-west of the Cathedral the site of St. Mac Duagh's tomb is still pointed out. It was probably one of those very small buildings sometimes called *oratories*, but more properly *Leabha* (i.e., a Bed or Tomb), as the examples at Ardmore, Leabha Mollagga, Inniscatra.

To the north of Temple Iun are portions of the side walls and gable of a building locally named *Shanaclogh*, from *Sean*, old, and *Clogh*, a stone. It appears to have been a secular building, as it stood north and south; and of some antiquity, as in the south gable there is a couplet window having semi-circular heads.

I would here again remark, that the early portions of the various remains at Kilmacduagh shew far superior masonry to the later or mediæval work, from the thirteenth to the fifteenth centuries. My note made on the spot is as follows:—"A remarkable feature in these churches is the masonry. In the west end of the nave of the Cathedral, in the chancel of the church of Temple Iun, and in the fragments of the other churches, the masonry is of large-sized material, the stones dressed to their natural shapes and remarkably well fitted, in some instances being of polygonal character. The chancel-arches, window-dressings, and other details in which wrought ashlar is used, the work is of most exquisite finish, the carved work clean and sharp, the ashlar worked almost to a polish, and the jointing so fine as in some instances to be scarcely perceptible."

I fear that it would be a hopeless task to seek to fix the date of the erection of any of the buildings at Kilmacduagh, except indeed we may give an approximate guess from the style and workmanship exhibited in their construction. Dr. Petrie unhesitatingly asserts that the church of Kilmacduagh was "erected for St. Colman Mac Duagh, by his kinsman Guaire Aidhne, king of Connaught, about the year 610."—(*Round Towers*, p. 675.) He refers, of course, to the original church, portions of which are to be found in the western end of the nave, as already described; and he quotes the following passage from the *Acta Sanctorum* of Colgan in support of his statement:—"Sta tuit tunc pirsimus Rex viro Dei Ecclesiam inibi extruere; quare manè sequentis diei misit ad eum sexaginta vacas effetas cum seruis & aucillis ad fabricæ opus perficiendum. Postridiè igitur eius diei Ecclesia Cathedralis de Kill-mhicduach cœpta est ædificari; cui exinde procerà regionis Aidhne, & stirpis Guarinæ sepultura cōsecrata est."—(*Ad. SS.*, p. 245, col. 1.)

There is nothing in the passage from Colgan which would fix the date at 610. Guaire, as I before stated, died in 662. It is unlikely, though not actually impossible, that he was bestowing sites for churches fifty-two years previously. Few Irish kings attained old age; not very many even middle age. We have also the difficulty mentioned before occasioned by the pedigree in the *Book of Lecan*, which makes St. Colman the son of Guaire's great granddaughter. Three of the churches retain features of a primitive antiquity, the more ancient portions of which may have been erected at any period from the fifth to the ninth centuries; two others are completely obliterated. Under these circumstances it would be extremely hazardous to say which was the original church erected by Colman Mac Duagh. Dr. Petrie states that the traditions of the surrounding locality ascribe the erection of both the Cathedral and Round Tower to the Goban Saer, that mythic builder to whom the construction of the majority of our Round Towers, abbeys, and castles is assigned. He labours to prove

the Goban to be a christian; the myth, however, is far older than christianity.

BOOKS RECEIVED.

Congal: a Poem, in Five Books. By Samuel Ferguson. Dublin: Edward Ponsonby; London: Bell and Daldy.

THIS poem, which as yet has received but scant notice from the reviews across the channel, is in every respect a remarkable one, not less remarkable for its wealth of imagery and power of metre than for its historic Celtic value. On the threshold of our notice we assert without the least equivocation that it is an "Irish Classic," and as such it deserves to live, and in time will no doubt possess an enhanced value. The leading incidents of the poem are, to use the author's words, derived from the Irish bardic romance called *Cath Muighe Rath*, or "the Battle of Moyra," with its introductory pre-tale of the *Fleadh Duinná n-Gedh*, or "Banquet of Dunangay." The principal characters in the poem are historic and well-ascertained entities, but in the working out of the poem the legendary resources of Ireland are wisely availed of, and give extra interest to the poem. The battle of Moyra took place A.D. 637, and as an event it is regarded as the final or expiring effort of the pagan or bardic party in this country warring against the newly-embodied power of the church and crown, giving as its *casus belli* the obligations which Domnal the reigning monarch had incurred to Congal, the disappointed sub-king of Ulster. The argument is indicated in the following five couplets, which serve as an index to the five books:—

- "BOOK I. King Congal, feast-ward bent, is turned aside. Bará Ardán's arts of spleenful Song are tried.
- " II. The royal Feast. The unintended Slight. Halt Kellach's Counsel; and the Aids for fight.
- " III. The Rising-out of Erin's guardian Ghosts. Conan's Resolve; and re-encouraged Hosts.
- " IV. King Domnal's Muster, ere the fight proceeds. Mad Sweeny's flight; and Northern Conal's deeds.
- " V. The Shrew; the Fool; the final Overthrow. What else remains, the verse, itself, will show."

The poem from beginning to end moves on majestically, and abounds with marvellous, martial, and romantic incidents. We are puzzled to know from which book to quote an extract, for each book has a beauty in itself, and there are passages in all of word-painting (not word-mongering) and powerful yet natural similes of nature and human nature that must impress the reader. If there be one unappreciative soul who falters before he reaches the end of the first book, let him turn to the end of the volume and read the poem backwards; or, better still, let him read through the "Notes" by way of exercise. If, after this process, his interest is not excited and his mind expanded—if he is not seized with a fit of fresh fervour to recommence the volume,—all we can say is we pity that poor mortal, and hope that his own gods will pity him, for he has no music in his soul. If the reader desires to read "Congal" with effect and enjoy the repast, let him attune his ear at once to the metre—let his own ears hear the sound of his own voice,—for none of your drowsy mental perusings are worth a pinch of snuff in going through this poem. Proud, pithy, and vehement are the utterances; mountain torrent and molten lava, the wild breezes of heaven, the wild birds and the wild flowers, underglimpses of the past, and the foreshadowing of the future—all and much more are here, and all are portrayed by a master hand with dramatic energy. Here is a passage from the first book in relation to a historic personage, whose name is an undying one in the memory of our people—the great master-workman or craftsman-architect, the mighty Gobhan Saoir, the worker in wood and stone, the fabled builder of our round towers, castles, cahirs, and bridges, and in one instance a worker in metal also:—

"When to that craggy steep
Came Goban with his mason train to build a treasure-keep

For mighty Finn. In living layers the jointed rampart rose
A spear's length thick; but when the wall should now well-nigh enclose
The central summit, Borchá came, by night, and with his staff
Scattered the one half of the work; but left the other half
Entire, that like a bristling crest on warrior's helmet set,
Looks toward Orgilla and the west with front defiant yet."

Here is another fine passage from the first book:—

"The very heavens that pour'd
Abundance on our fields and streams, while that victorious lord
Of righteous judgments ruled the land; the stars that, as they
ranged
The bounteous heavens, shed health and wealth, above our
heads are changed.
Nor marvel that the sickening ailes are altered o'er our heads,
Nor that from heaven's distempered heights malign contagion
spreads:
For all the life of every growth that springs beneath the sun
Back to the air returns when once its turn of life is done:
To it all sighs ascend; to it, on chariot-wheels of fire,
All imprecations from the lips of injured men aspire;
And when that lofty lodge of life and growth-store of the world
is choked with groans from burthened hearts and maledic-
tions hurled
In clamorous flight of accents winged with deadlier strength
of song
From livid lips of desperate men who bear enormous wrong,
Heaven cannot hold it; but the curse outbursting from on high
in blight and plague, on plant and man, blasts all beneath the
sky.
Burst, blenkening clouds that hang aloof o'er perjured
Domnal's halls!
Dash down, with all your flaming bolts, the fraud-cemented
walls,
Till through your thunder-riven palls heaven's light anew be
pour'd
In Law and Justice, Wealth and Song, on Congal's throne
restored!"

A good reader in a "public reading" could give the above lines with telling effect. We select from the second book the following:—

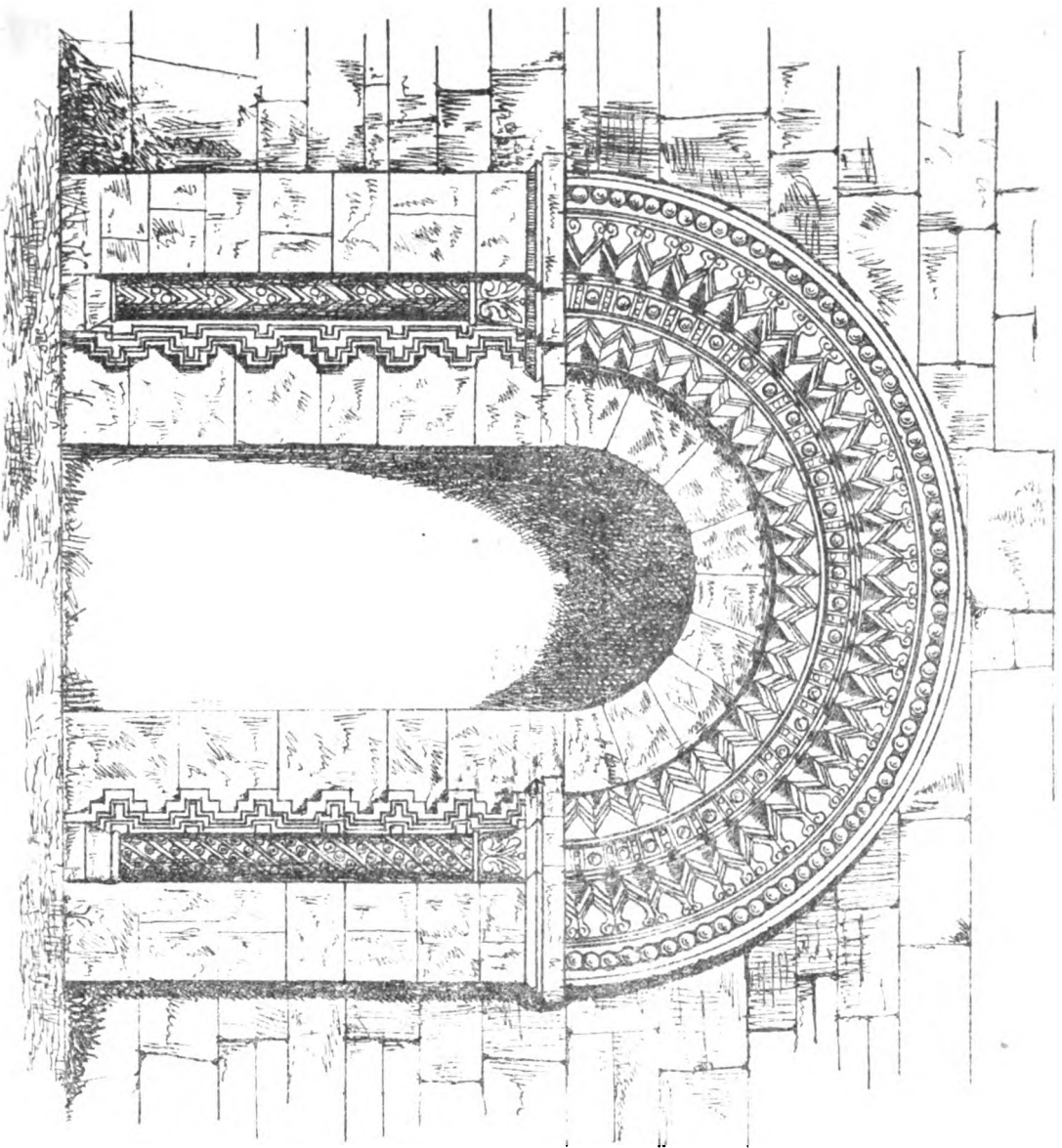
"The Princess with her women-train without the fort he
found.
Beside a limpid running stream, upon the primrose ground,
In two ranks seated opposite, with soft alternate stroke
Of bare, white, counter-thrusting feet, fulfilling a splendid clock
Fresh from the loom: incessant rolled athwart the fluted board
The thick web fretted, while two maids, with arms uplifted,
poured
Pure water on it diligently; and to their moving feet
In answering verse they sang a chaunt of cadence clear and
sweet.
Princess Laínda stood beside; her feet in dainty shoes
Laced softly; and her graceful limbs in robes of radiant hues
Clad delicately, keeping the time: on boss of rushes made
Old nurse Levarcam near them sat, beneath the hawthorn
shade.
A grave experienced woman she, of reverend years, to whom
Well known were both the ends of life, the cradle and the
tomb;
Whose withered hands had often smoothed the wounded
warrior's belt;
Bathed many new-born babes, and closed the eyes of many
dead."

There is no Robert Browning ambiguity in the above lines; all is clear, natural, and sparkling like the crystal water of a spring undefiled. Our next quotation will be from the concluding lines of the third book. The language and the similes are admirable, and are worthy of the author of "The Forging of the Anchor"—verses that are well known to Irish readers:—

"As a great black barque, compact of many a tree
That, on her launch from some high beach, shoots down at
once to sea;
Or like as when, in time of thaw, a snow-drift deep and wide,
By strong winds in a hollow place lodged on a mountain side,
Fetches away with loosening crash; or like as when, a cloud
Lumbering the sky, strong winds arise, and all the aerial crowd
Fall on at once; it bulges, bursts, rolls out, and overspreads
The face of heaven with ominous gloom above amazed men's
heads;
So ominously, so all at once, with clash and muttering jar,
Swift, dark, on Moyra's fated field rolled down the cloud of
war."

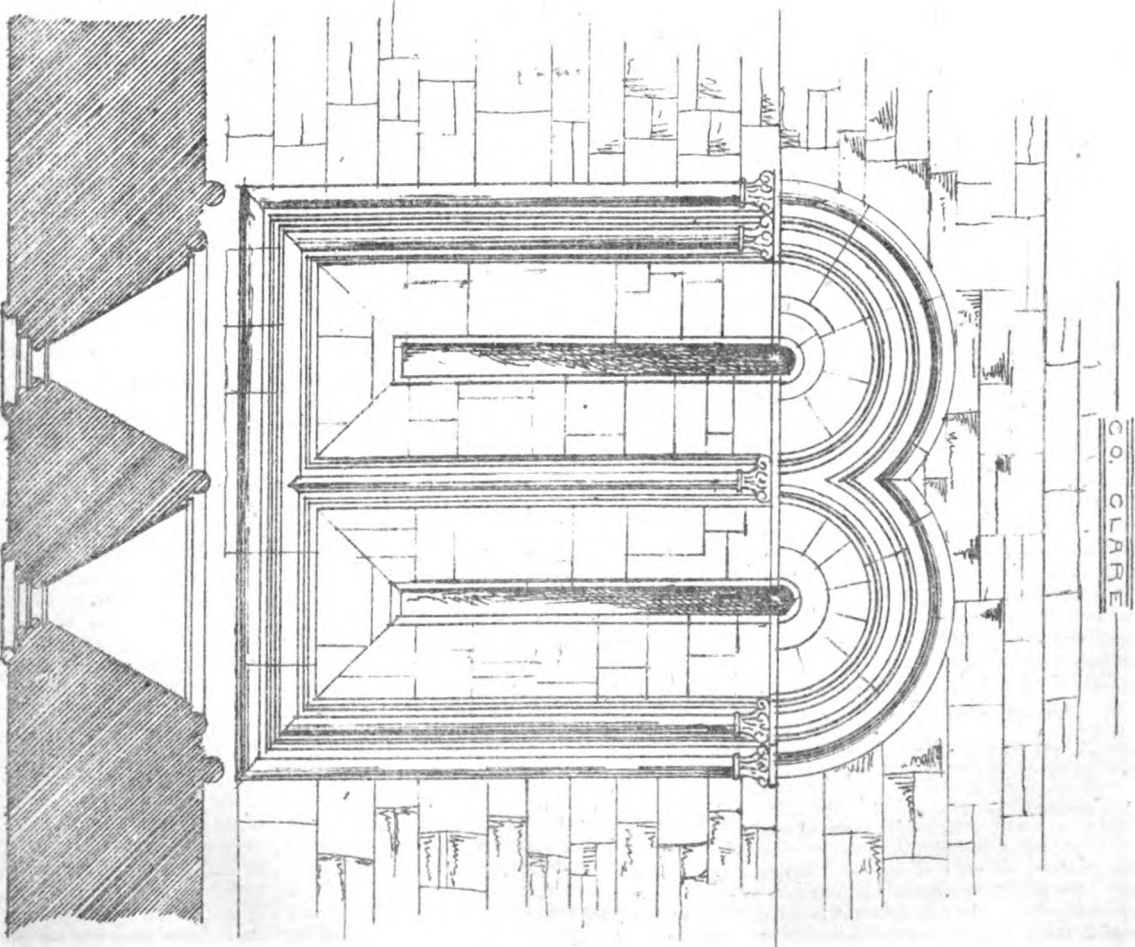
Here is a war picture from the fourth book, where the contending hosts are in the heat of a deadly struggle:—

"In balanced scale, in even fight,—no thought on either side
Of yielding back,—the eager hosts their work of battle plied,
Stern, dark, intense, incessant, as forging smiths that snite
In order on the stithy head through spark-showers bailing
white.
And, as when woodsmen to their work, through copse and
stubble go,
Grasping the supple red-skinned twigs with darting bill-hooks,
so
With frequent grasp and deadly grip plucked from their
slippery stand,
They went continual to the earth: the grassy-vestured land,
Stamped into dust, beneath them glowed; the clear fresh
morning air
Vexed with the storm of whirling arms, and tossing heads
and hair,
Around them reeked; while, overhead, in dense unwholesome
pail,
A sweet-and-blood-engendered mist rose steaming over all.
Dire was the front-rank warriors' case; nor, in their deadly
need,
Did son of father longer think, or friend of friend take heed;
But each deemed all the strength and skill his prowess could
command
But scant enough to serve the need that claimed his proper
hand:
Fresh hands with deadlier-wielded blades, new foes with
angrier frown,
Succeeding ceaseless in the front, fast as the old went down."



ACHARDOE CHURCH

KILMABNEY



KILMADBUACH

CO. CLARE

EAST WINDOW OF TEMPLETON

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With two more quotations from the fifth book we will end our extracts for the present. How many of us have not known or realised the picture described in these four lines?—

"And—haply, being a citizen just 'scaped from some disease
That long had held him sick indoors, now, in the brine fresh
breeze,
Health-salted, bathes; and says, the while he breathes reviving
bliss,

'I am not good enough, oh God, nor pure enough for this!'

It passed. Light Sweeny, as it passed, went also from their
view:

And conscious only of her task, Laidla bent anew
At Congal's side. She bound his wounds, and asked him,
'Has thy heart

'At all repented of its sins, unhappy that thou art?'

'My sins,' said Congal, 'and my deeds of strife and blood-
shed seem

'No longer mine, but as the shapes and shadows of a dream:

'And I myself, as one oppressed with sleep's deceptive shows,

'Awaking only now to life, when life is at its close.'

'Oh, grant,' she cried with tender joy, 'Thou, who alone
canst save,

'That this awaking be to light and life beyond the grave!'

'Twas then the long-corroded links of life's mysterious chain
Snapped softly; and his mortal change passed upon Congal
Clen."

The foregoing lines are finely rendered. Whoever reads the poem carefully through-
out cannot but be impressed with its many
beauties. Our extracts are not given as the
best, but we give them because they struck
us as being appropriate. The principal
persons in the drama are Congal, the hero;
Sweeny, or in Irish *Suibhne*, his intended
brother-in-law; Domnal, his antagonist; with
Eochaid, king of the Scottish Dalriads, and
his son Domnal Brec. Of the other charac-
ters, some are real and others legendary, but
none foreign to the subject.

We desire to say little more in commen-
dation of Mr. Ferguson's last contribution to
the bardic literature of the Gael. Having its
source in our early literature, the adaptation
—if we cannot strictly say the translation—
has found a master-workman in the person
of our author, and Congal stands forth once
more with his true place in Irish history.
The historic "Notes" alone appended to the
volume are a treasure in themselves, and by
their aid the poem can be read with the high-
est advantage and profit. The mechanical
get-up of the volume is a credit to the Dublin
printing and publishing trades, and as a whole
it may safely challenge criticism, come from
what quarter it may; typography, illustration,
and binding are up to the mark in every par-
ticular. One word more. Lovers of Irish
bardic literature, read "Congal"—read the
volume through and through, "Notes" and
all, and be thankful that it was published
during your lifetime.

*The Queen's Highway: being an Argument
for the Amalgamation and Purchase of the
Irish Railways by the Government.* By
George Roberts Crowe. Belfast: Printed
by W. W. Cleland.

THIS is a sensible, clearly stated, and suf-
ficiently comprehensive argument in favour of
the purchase of the Irish railway service by
the Government. The principal details are
docketed under separate headings, and are
dealt with in a manner that will convince
the sceptic that the system advocated has
many advantages over the present manage-
ment. The writer of these remarks upwards
of a dozen of years since advocated the
purchase of the Irish railways, though he
saw more difficulties in the way then than
exist now. Although we are in principle
opposed to too much State centralization and
control, or to the Government buying up
projects which could be as well managed by
private enterprise, yet, in the matter of the
Irish railways passing under the Govern-
ment, we see nothing dangerous to public
liberty. As is the postal and telegraph de-
partment, so ought to be the railway service.
It may be some consolation to the insurgent
chief or his followers to know that a railway
embankment can be as easily destroyed under
State management as under any other
management; and even if it were not so, if
a civil war raged in this island, the Govern-
ment would temporarily take possession or
enforce their commands on all the railway
lines. Leaving the military questions of
railways out of view, we are convinced that,

commercially viewed, the amalgamation and
State purchase of all the railway lines in
Great Britain and Ireland would be a decided
advantage. We would then have a uniform
rate, or something near it. The lines would
be worked more economically; branch lines
could be projected and carried out at a small
outlay on the narrow-gauge system, and the
block system would be carried out in the
running of the trains, to the great saving of
human life. We can commend the perusal
of Mr. Crowe's brochure to the attention of
the Irish public.

*The Theory of Strains in Girders and Similar
Structures.* By Bindon B. Stoney. London
Longmans, Green, and Co. 1873.

OUR notice of this new and enlarged edition
of Mr. Stoney's valuable work is unavoidably
held over.

OBITUARY.

THE LATE JAMES HAUGHTON.

WE have again to record in this issue the
death of another worthy and respected
citizen, well known in this city for upwards
of forty years. James Haughton's name is
associated with many philanthropic move-
ments in this country. Though never a great
politician, he occasionally took part in po-
litical movements with a benevolent purpose.
The deceased on many occasions during his
career mixed, by his pen and voice, in social
questions, and several of his public letters
were admirable. He was a firm and constant
advocate of the teetotal abstinence cause
during upwards of thirty years; and he
always took great interest in the success of
the Dublin Mechanics' Institute, of which he
was a warm friend and patron. He won and
preserved the esteem of all classes of his
co-religionists, and he has died as he had
lived, respected. His funeral was attended
by a very large concourse of wealthy and
humble citizens to Mount Jerome on Monday.
He had attained the age of 77 years.

WHAT IS DIRT?

IN Dr. Stokes' introductory lecture at the
Royal Dublin Society there is, in our opinion,
one most unfortunate passage; otherwise the
lecture is excellent. Let our readers note
well the following very extraordinary state-
ment:—

"Dirt—whatever that meant—did not make
people sick, nor did bad smells, though they were
commonly supposed to be fearful sources of disease.
The people living on the quays of Dublin, notwith-
standing the common thread-bare jokes about the
peculiar perfume of the Liffey in warm weather when
the tide was out, were the most long-lived in the
city, and the freest from typhus and epidemic. So,
too, in the North of Ireland, when at one time
certain exact people made a great outcry because the
whole country was covered with flax recently steeped,
the province remained one of the healthiest. Dirt
by itself was never so much the origin of disease as
a measure of the moral and social education and con-
dition of the people. It was on this subject that a
great man, when speaking some time ago of the
means of warding off cholera from Dublin, said that
they would curse the day they made the production
and quality of food for the people subservient to and
sacrificed to cleanliness, and thus converted their
homes into whitened sepulchres."

The opinions expressed in other parts of
Dr. Stokes' lecture directly negative the
above doctrine. In the name of common
sense what does the worthy doctor mean by
raising a doubt about the meaning of the
word "Dirt"? When the word is used in
connection with sanitary science it has been
always understood to mean—any foul or
filthy substance, excrement, earth, mire,
dust, or what adhering to anything renders
it foul or unclean. This explanation, or
something similar to it, is also the meaning
of the word in our standard dictionaries.
Dirt and filth, as ordinarily understood, are
convertible terms in connection with sanitary
science. Maugre the acknowledged medical
reputation of Dr. Stokes, we strongly object
to the opinions expressed in the extract

we have given above. We are not more
certain of our existence than we are of the
fact that dirt or filth produces disease,
and that bad smells *do* make people sick—
yea, more than sick, positively ill, and often
an illness ending in death—the direct cause
in hundreds of instances of dirt. The Corpo-
ration of Dublin will in future have grounds
for neglecting to cleanse the Liffey, and they
may ask to stand excused from doing their
duty in the face of what Dr. Stokes has given
expression to. No person has asserted that
dirt is the origin of all our diseases, but it is
an undeniable fact that it is both a cause and
auxiliary of more than one disease by which
hundreds of the poor are hurried to premature
graves.

As to the question of making the produc-
tion and quality of the food for the people
subservient to and sacrificed to cleanliness,
a great deal can be said on this matter. If
sacrifices must be made, any reasonable
sacrifice ought and should be made in favor
of cleanliness. Bad food is scarcely a less
evil to the poor than living in dirt—in fact,
having to eat bad, unwholesome, and adulter-
ated food is in a measure having to eat dirt.
To live, then, in the midst of dirt, and having
to live partly on dirt, is a double misery, and
the poor continually suffer from the combined
evils.

In justice to Dr. Stokes, we will give an
extract from the conclusion of his lecture:—

"Turning to the existing state of Dublin at the
present moment, the lecturer said that few of his
hearers had any accurate notion of the deplorable and
abominable condition of the city in some of its oldest
and worst parts—plunged as they were in the very
depths of ignorance and poverty, and the physical
condition of the people who occupied them being
worse than in most other cities in the empire, and
the rate of births to deaths per cent. being much
less than in London where they were 146·91,
Glasgow 133·2, and Edinburgh 132·1, while here
they were but 103·8. This indicated a disgraceful
and alarming disregard of the ordinary laws of nature
and of health, and in proof of this might be instanced
the apathy which prevailed regarding the introduc-
tion of small-pox lately, compared with the prompti-
tude which was displayed in grappling with the
cattle plague, which was looming up a little before,
illustrating the ancient proverb that men loved gold
rather than life. As to disinfectants, it was well es-
tablished that chemical re-agents were capable of
destroying infusorial life, but, in order to be success-
fully applied, they must be used in a more concen-
trated form than that in which they were commonly
employed. But, even when their growth was
checked, who could say whether their vitality was
completely annihilated? In the vegetable world,
the bulb, clasped in the hand of death by an Egyptian
mummy, sprang into life after thousands of years in
the tomb, its vital principle dormant through all
those ages. Who, then, could tell how long these
other lethiferous atomic forms might float on in
suspended animation, and then suddenly germinate
amongst a people."

These final remarks, as well as the intro-
ductory observations, of the lecturer are
worthy of attention. We could not, however,
allow the expressions already alluded to to
pass unnoticed, as we believe they are not
only unfortunate but dangerous to have ven-
tilated in this country.

Since writing the above we have seen a
report in the *Mail* of Dr. Stokes' lecture,
which differs in many points from that which
we have quoted from our contemporary the
Daily Express, and on which our remarks
were founded. How come these discrepan-
cies? It is absolutely necessary, in such a
vital question as the public health, that the
public should be furnished with exact reports
of the opinions expressed by the lecturers;
otherwise a great injustice may be done both
to the lecturers, the subject, and the public.

THE GAS QUESTION.—We are glad to see that the
Corporation Gas Bill is not likely to pass unchallenged
in its monstrous provisions, which we have already
condemned. The Chamber of Commerce are doing a
duty for which they deserve the thanks of the citizens.
There has been nothing but a system of "hugger-
mugger" at work between the proposed buyers and
the sellers of Alliance Gas Works since the scheme
was first mooted in this city, in the interest of a few
individuals instead of the body of our citizens.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

STAPLE-STREET.

SPIRITS of George Semple and Dr. John Rutty, could you revisit your olden haunts on the northern banks of the River Anna Liffey, you would indeed stand abashed at the curious anti-climax to your dreams of a century ago, and later! The bridge still stands which was augured to last intact as long as the adjacent mountain called the Sugar Loaf, which was once visible from the middle heights of the modern city. While we write, however, vandal improvers and designing engineers are speculating upon the strength of a job that is not warranted to last, though the jobbery that begat it may. Thus musing, we pass from the line of Quay into the line of Hasp and Staple, which appear to be well represented on either side of our route. Boyish memories rush back upon our mind as we traverse the street upward and downward, and we look wistfully on signboards for the names we knew of erst. The booksellers, publishers, artists, and manufacturers of the old school that we had known are not here, and none can tell us whither they have flown, or where we might find even one of their descendants. Not one rare old bibliophile, not one old classic bookseller, not one painter, print or book engraver, nor even one racy, real, and benevolent-faced manufacturer whose word was a bond, remains! Honest, hard-working traders are here, without doubt, but the original stock of craftsmen are gone! The thoroughfare is flanked on either side with an industrious race of agents and sellers—sellers nearly all, from garret to cellar; sellers with a natural proclivity to be "selling off," so much so that nobody would suppose they were ever "buying in." In our schoolboy days the hasp and staple trade had not migrated to this quarter, and the golden keys and the locksmiths at whom Love had wont to laugh were to be found out and about Skinners'-row, Drug-lane, and Shamble-street. Since then, however, the denizens and dealers of Plunket-street bundled up and levanted with their packs to Pantaloon-street and Swallow-tail-lane; and the trunkmakers, who seem to have inherited a curse, have been wandering from one place to another, yet always keeping in sight of "Paddy's Market." Here comes our cicerone the "Oldest Inhabitant," and he, no doubt, will refresh our memory a little on things that were and things that are passing away.

"This street, sir, was once considered an enviable locality, and was much resorted to prior and subsequent to the building of the New Bridge. Many celebrated men lived about here, of whom no record in print exists; others of whom very scant notices have been printed. When in my teens it was a favourite promenade for the young men and women of the northern suburbs. On the long summer evenings they came crowding in from Glassnamogue, Oxmantown, and the "Big Tree." Many a dare devil leaped the Bradogue River, which was then an open stream, and came across the fields where the King's Inns were afterwards erected. I have crossed through the meadows there myself ere the Old Canal House disappeared. It was a fine old red brick mansion, and it appeared as if it was built in Queen Anne's reign.

"Staple-street, sir, even early in the present century, was a most respectable and brilliant street. I knew the Coynes, the Fitzpatricks, and the Graces. The two former used to publish many religious works for the bishops, but their works were not confined to theology alone; many classic and standard editions issued from their houses, and pamphlets and prints in legion. Coyne was one of the last, if not the very last, of his craft that wore knee breeches, buckles in his shoes, and frills to his shirts. A very upright, shrewd, and thorough business man was Dick, as some were wont to familiarly style him.

His shop was situated within a few doors of Molly-street, and I never passed his door without looking in; and he was seldom absent. He enjoyed a look out on the thoroughfare; and, while enjoying it, he generally stood in the centre of the shop floor opposite the door. Folding his arms, he stood as silent and as motionless as a statue, neatly dressed, and his frills and collar as white as snow. The buckles on his shoes appeared to be silver, they were so shining, and formed a gay contrast to his brilliantly-polished leather. He would have made an admirable model for a statesman of the last century in face and costume, if the artist using him for such gave the statue the appearance of motion and oratorical vigour. The rare old publisher, whom bishops patronised and citizens respected, has passed away many years ago, and still I am living, as if my life was a memory of yesterday.

"Between Sand-street and Old Gabby-street lived a renowned bootmaker of the name of Floyd, who made a lucky purchase of a polishing recipe, like Day and Martin, from some itinerant craftsman. Floyd's blacking set off his boots to such an advantage that his trade went up, both in leather and lampblack, in a few years, and became all the rage. It never rains, sir, but it pours. One early summer morning as Floyd was taking his accustomed ride in the Park, immediately after a grand review day, he picked up a lump of money, amounting, some say, to several hundreds; the exact amount never transpired, though the finder advertised at intervals during three years for an owner, but no owner or other ever advanced a claim. After some time Floyd gave up his famous boot shop, purchased an estate in Fingal, and became a gentleman farmer, at which avocation he continued for nearly twenty years, giving it up within a year or two of his death.

"Not many doors distant, early in the present century, lived a noteworthy character of the name of Phil Larkin, a worthy knight of the thimble. Phil was a merchant clothier, and held one or two public trusts during his life. He was an agitator in days, sir, when agitation meant something more than talk. Phil was a constant attendant at ward and vestry meetings on both sides of the river. He incurred the anger of a Dublin trades' organ, published in Copper-alley, which told him, in the language of Shakespeare, 'Put up thy sword, traitor'; but Phil gave his censor a Roland for his Oliver. The organ, however, renewed its attack with undue bitterness, so Phil had, in vindication of his character, to institute an action for libel. The action broke down, as neither the editor nor proprietor could be identified, through some flaw or other. Another action succeeded, and another break down was the issue; and Phil being discomfited, the triumphant broadsheet lampooned in prose and verse for several weeks the unhappy plaintiff. Phil, having robust health and good digestion, lived down the libels and outlived the organ and its detractions. Enjoying the confidence of his fellow citizens, Phil in after years was elected as staff-bearer to the chief magistrate—an office which he enjoyed for many years. Phil, for a number of years during his active life, had a worthy colleague in the person of a namesake named Phil Raymond, at one period the eccentric City Marshal. Often and often, sir, I met the two Phils linked arm in arm walking down Staple-street on their way to an anticipated stormy meeting at the Assembly House, Whilom-street. Phil Raymond was a real public character, born with the gift of the gab. He had a brother who represented Stonybattery for a short time in one of our latter-day parliaments, but Phil himself never looked for higher honours than civic representation. In pursuance of the duties of his office at the annual 'riding of the franchise,' Phil Raymond used to mount a blind nag, whose spirit was completely curbed by mature age and infirmities, which rendered it a safe mount for its inexperienced rider, who, despite his assumed martial bearing, sat ill at ease in his saddle, and trembled not a

little in his boots. The mischievous Dublin jackeens, as soon as they espied the civic outrider, were in the habit of saluting him, and all with one accord would doff their caubeens, shouting 'Bravo, Phil! Go it, Neddy! Three cheers for the Town Major! Give the nag a touch of the spurs, Phil!'—but the spurs would have no more effect on the nag's hide than upon Nelson's Pillar, for, though the beast was a sensible brute, it had lost all its early sensibilities. Phil Raymond, sir, was once a violent politician, but he sobered down late in life, and even became a teetotal advocate. During the last years of his life he was engaged in researches into the occult history of pawnbroking, and at his death it was said that he left a great bundle of curious MSS., entitled 'The Three Balls, or the Origin, History, and Mysteries of Pawnbroking.'

"Further up the street, sir, in that well-built old brick house half way between Gabby and Polly streets, lived for a short while the author of 'Gustavus Vasser' and 'Jack the Giant Killer.' The last piece was acted in Smock-alley Theatre, but was prohibited by the Government after one or two representations. A few minutes' walk will bring us opposite where Hone, the celebrated portrait painter, lived at the close of the last century.

"We have just passed the house where Con Molony kept a reading-room, and published a penny magazine in the year of the Revolution. Con was a versatile character; he tried several methods for a livelihood, but never succeeded. He acted as a secretary to several public societies and institutions during his life; news agent, commission agent, publisher, journalist, and he on one occasion went out to the Island of Madeira as a private secretary with a well-known public man who was recommended by the faculty to try a residence in that island for the recovery of his health.

"A few doors above Con Molony's reading-room John Greenmantle, a young and racy Dublin writer, started an artisans' journal in concert with John Frazerburgh, known as the poet of the people. The little literary venture lived to its sixth or seventh number, when it departed life, like many other native plants, for want of local support. The journal was well written, and its poetry was original and spirited, and was nearly all the production of Frazerburgh. Greenmantle, sir, I believe, was a native of the city, and the poet came originally from the King's County, but in the pursuit of his early craft worked as a journeyman cabinet-maker both in London and Dublin. Greenmantle emigrated to America many years ago; and the poet (peace to his ashes) is in the grave of our fathers.

"Little or no buildings of any note have been erected in Staple-street within the last half century. There have been a number of alterations, and a few 'gin palaces,' so called, have sprung into existence. Shop front architecture—bah! Lath and plaster partitions, tinfoil and gutta-percha ceilings, mock-panelled counter fronts bearing marble tops showing 2-inch moulded edges cemented to 4-inch bodies, metal columns enclosed with panelled mirrors, obliterated chimney breasts with their superincumbent stacks supported upon gilt puncheons that are never tapped; dry souls mouthing like madmen in the shops, and dry-rot and choked drains in the cellars, indecency electro-plated and dirt everywhere embossed. If these, sir, are the characteristics of the new style—the new Victorian Order—of shop front architecture, Staple-street will not carry off the lowest prize. Oh, sir, when will this 'abomination of desolation' end; is there no balm in Gilead, no lava in the bowels of Howth or Killiney hills to blow this blasting and corrupting order of disorder—this mushroom and bastard fungi architecture—to the winds?"

Subscribing in a great measure to the vehemently expressed opinions of the "Oldest Inhabitant," and taking another look at the old red brick fronts he pointed out, we parted for the evening.

ROYAL DUBLIN SOCIETY—HEALTH LECTURES.

THE series of Saturday afternoon lectures on Sanitary Science commenced at the Dublin Society will, we believe, be productive of good results. The lecturers are nearly all well-known professional men, some of whom have already done good service in the interest of the common weal. One of the primal objects for which these lectures were instituted is to inculcate the laws of public and individual health, by pointing out the causes of several diseases which are clearly preventable. There is no class, however, which requires instruction on these points more than our working classes. In view of this portion of the subject, we are of opinion that there has been a mistake made in the direction of the charges for admission; there are many of our working men who cannot afford to pay one shilling, or eight shillings for the entire series. If it is aimed at to make the lectures a select gathering, the committee have hit on the plan to effect it. The great drawback to the usefulness of these lectures is, that we fear they will not be attended by the number of our artisans and other similar circumstanced persons, who would otherwise avail themselves of them had the prices of admission been lower. A far lower sum might with safety have been fixed—in fact there ought to be a course of free lectures for the working classes on such an important and vital question as the Public Health. Those better circumstanced could have superior accommodation or sittings. We hope the committee of management will, before there are more lectures delivered, make a desirable change. We would venture also on another suggestion: each lecture should be printed for distribution in small pamphlet or circular form, and sold at a small sum, and each preceding lecture delivered should be obtainable by the audience at each succeeding lecture in the printed form we describe. These arrangements could be easily carried out, and the lectures would receive a four-fold circulation. Apart from these suggestions, we view the course of lectures in themselves a good and admirable beginning; and so far as the Dublin Sanitary Association has assisted in leading to their delivery, it is entitled to the thanks of the Dublin public.

PRIZES FOR MURAL AND FRESCO PAINTING AND DECORATION.

SOME months ago we drew the attention of our readers to the subject of mural and wall painting, and spoke of its practice some centuries ago in Ireland, scant though conclusive relics of which still exist. In the sister kingdom some good examples have been discovered and preserved, which have come to light in church restorations. The ruin and spoliation which overtook many of our ecclesiastical structures are the chief causes why so little of the art still remains in this island. Again, in the seventeenth and early in the eighteenth century, the barbarous fashion of wall-plastering and whitewashing to which some of our splendid cathedrals as well as churches were submitted covered up many wall paintings, which led to their obliteration and almost final destruction. Some of our native archaeologists, antiquarians, and architectural writers—among whom may be mentioned the late George Petrie—have described a few instances in their printed works and in their papers read before our learned societies. As to the artists who executed our early mural and fresco paintings, we fear there will be very few reliable particulars obtained at this period. There can be very little doubt that the artists in several instances were ecclesiastical students and churchmen, for the men who designed among our churchmen also executed often; they were architects, artists, and craftsmen at the same time. Some rude examples of fresco painting are mentioned by George Petrie, in his essay on the "Rise and Progress of Fine Arts in

Ireland." One instance occurs to our memory at present in connection with Knockmoy Abbey, an illustration of which fresco painting is given in the first volume of the *Dublin Penny Journal*, 1832-3.

The Lords of the Committee of Council on Education are now moving in connection with the important subject of mural and fresco paintings, and they offer prizes for the execution of successful copies of any existing works. The information desired is as follows:—Name of church or other old building on the walls of which the paintings exist; name of town, &c.; county; whether in tempera, fresco, or oil; size; name of artists, if known, or probable name; date of work, or probable date; name of any printed works containing description of the above. The following circular is being issued in this country by the Head Master of the Royal Dublin Society School of Art:—

SIR.—The Lords of the Committee of Council on Education are desirous to ascertain the existence of ancient wall paintings in churches and other old buildings, and decide that prizes of £5, £3, £2, and £1 shall be offered for successful copies of such paintings by students of schools of art, with the condition that the Department of Science and Art shall have the right of purchasing such copies, at prices to be fixed by the Inspector General for Art. May I ask you to have the goodness to fill in the blank spaces of the enclosed form, should it be in your power to give information of such works in Ireland with which you may be acquainted, or which may exist in your locality—I remain, your obedient servant,

EDWIN LYNE.

We fondly trust that there will be a favorable response, and that our art-students will be successful in carrying off a few prizes.

"THE QUERIST."

BY GEORGE BERKELEY, BISHOP OF CLOYNE.

(With Notes by "Dublinensis.")

"FIRST PUBLISHED A.D. MDCCXXXV."

WHETHER an inward trade would not cause industry to flourish and multiply the circulation of our coin; and whether this may not do as well as multiplying the coin itself? [An inward trade with a proper outlet would secure the prosperity of the country.]

Whether the benefits of a domestic commerce are sufficiently understood and attended to, and whether the cause thereof be not the prejudiced and narrow way of thinking about gold and silver?

Whether there be any other more easy and unenvied method of encreasing the wealth of a people?

Whether we of this island are not, from our peculiar circumstances, determined to this very commerce above any other, from the number of necessary and good things that we possess within ourselves, from the extent and variety of our soil, from the navigable rivers and good roads which we have or may have at a less expense than any people in Europe, from our great plenty of materials for manufactures, and particularly from the restraints we lie under with regard to our foreign trade? [If the creed of "Home Rule" has any honest application, it lies in the direction here indicated. If our people are disposed to help themselves, let them develop the trade and manufactures within their country. Appealing to historic names and memories alone will never raise an individual or a people. Children cry for the sun and the moon, which it is not possible for them to have; yet we who enjoy its light will not utilize it. By the establishment of manufactures we increase our wealth and we elevate our people. There are gradations in every enterprise. Rome was not built in a day, and a nation of mere buyers and sellers will never leap in one bound to a great manufacturing and governing nation.]

Whether annual inventories should not be published of the fairs throughout the kingdom, in order to judge of the growth of its commerce? [Annual returns should be published in connection with every trade, as

a guide to the condition and resources of the country.]

Whether there be not every year more cash circulated at the card tables of Dublin than at all the fairs of Ireland? [At the period when Berkeley penned the above, the accusation held good, and up till nearly the close of the last century. Gaming now has found out new avenues for its practice in club, field, and forum.]

Whether the wealth of a country will not bear proportion to the skill and industry of its inhabitants? [The former is the natural result of the exercise of the latter. Were sovereigns to spring up simultaneously in every poor and rich man's garden without skill and industry, the golden growth would be little short of a curse.]

Whether foreign imports that tend to promote industry should not be encouraged, and such as have a tendency to promote luxury should not be discouraged? [Imports that have a tendency to permanently establish a trade, not depending upon the caprices of fashion, should be encouraged; but no imports should be encouraged that would tend to destroy a remunerative domestic trade. All that tends to luxury should be discouraged.]

Whether the annual balance of trade between Italy and Lyons be not about four millions in favour of the former, and yet whether Lyons be not a gainer by this trade? [In 1735 and later, the condition of things indicated by the bishop may have existed.]

Whether the general rule of determining the profit of a commerce by its balance doth not, like other general rules, admit of exceptions? [Certainly.]

Whether it would not be a monstrous folly to import nothing but gold and silver, supposing we might do it from every foreign port to which we trade; and yet whether some men may not think this foolish circumstance a very happy one?

But whether we do not all see the ridicule of the Mogul's subjects, who take from us nothing but our silver, and bury it under ground in order to make sure thereof of its resurrection? [A not much more foolish practice than that to which many of our own countrymen were prone. There was very little difference between burying silver in the ground and hiding gold or notes in the thatch. Neither produced any interest, and its safety was questionable. If sparrows did not make nest eggs of it, hawks without wings often laid unholy hands upon it to their own great profit and to the no immediate hardship of the foolish owner.]

Whether he must not be a wrong-headed patriot or politician whose ultimate view was drawing money into a country and keeping it there? [Something tantamount to the miser who heaped up his gold to thousands while he still kept starving himself to encrease the amount. A reserve fund is useful and advisable, but accumulated capital unapplied is as bad as no capital at all, as far as the nation is concerned.]

Whether it be not evident that, not gold but industry causeth a nation to flourish?

Whether it would not be a silly project in any nation to hope to grow rich by prohibiting the exportation of gold and silver?

Whether there can be a greater mistake in politics, than to measure the wealth of the nation by its gold and silver?

Whether gold and silver be not a drug where they do not promote industry? Whether they be not even the bane and undoing of an idle people?

Whether gold will not cause either industry or vice to flourish; and whether a country where it flowed in without labour must not be wretched and desolate like an island inhabited by buccaneers? [Yea, like an island inhabited by a more lazy race than buccaneers, and less active and healthy.]

Whether arts and virtue are not likely to thrive where money is made a means to industry; but whether money without this would be a blessing to any people?

Whether keeping cash at home or sending it abroad, just as it most serves to promote

industry, be not the real interest of every nation?

Whether commodities of all kinds do not naturally flow where there is the greatest demands? Whether the greatest demands for a thing be not where it is the most use? Whether money, like other things, hath not its proper use? Whether this use be not to circulate? Whether, therefore, there must not of course be money where there is a circulation of industry? [To all who are dependent upon their honest industry to live, it is alone by the exercise of that industry or some other they can create capital, leaving out of view all exceptional accidents or combinations.]

Whether it is not a great point to know what we would be at? And whether whole states as well as private persons do not often fluctuate for want of this knowledge? [Those people who do not know what useful matters they should be at, or engaged upon, will find themselves one day or other committed to pursuits which will go against their grain to prosecute. Men and women who will only do what they like to do will likely be obliged to do everything what they do not like to do, that they may honestly live.]

Whether gold may not be compared to Sejanus' horse, if we consider its passage through the world, and the fate of those nations which have been successfully possessed thereof?

Whether means are not so far useful as they answer the end; and whether in different circumstances the same ends are not obtained by different means? [Good results may be obtained by a variety of means, but for pressing wants in a good cause the most direct method for obtaining the desired results should be adopted even though the ends are not commensurate with the temporary sacrifice.]

If we are a poor nation abounding with very poor people, will it not follow that a far greater proportion of our stock should be in the smallest and lowest species than would suit with England? [It is a consideration with a poor people to "cut their cloth according to their measure," and in Berkeley's day his suggestion was entitled to a careful attention so far as Ireland was concerned. Those who trade with the poor will need, if they would multiply their customers, to accommodate their measures to their customers' wants. Pennies multiplied by twelve are shillings, and shillings multiplied by twenty are pounds, is a table not yet properly understood in this country. Those who faithfully serve and fairly accommodate the poor will never need customers. They may be long in growing rich, but not long in growing happy in mind and respected.]

(To be concluded in our next.)

COLORED DECORATION.*

In asking you to discuss the question of "Colored Decoration" this evening, I must request you to pardon me if I appear to detain you unnecessarily with a recital of those natural laws on which its successful practice must ever be founded. We have to deal with a subject which is not dependent on individual taste, but which, like every other branch of professional practice, is governed by inflexible rules. It is true that these laws may be unconsciously recognised and their teachings followed—as in the other departments—without a clear apprehension of the matter; still, I submit that much will be gained if we start with a common groundwork for discussion.

We must all desire to see the architect the real director of his works. We are every day urging that not only the building itself but its decoration and finishing should be confided to his care. We are constantly protesting against a work which has been carefully planned and rendered externally pleasing being spoiled internally when its completion is confided to other hands, and this from want of accordance, even although

the decorator, &c., may be intrinsically good. The sculptor and carver willingly come to the architect's aid, and he is often wisely content to direct and define, generally leaving minor details to their taste and skill. The painter—beset as he has been by chemical and mechanical difficulties—offers his best services. Why should not the decorator and upholsterer also act more frequently with the architect in giving unity to his work, and this not only in great undertakings, where this necessity for unity is acknowledged, but in smaller and apparently unimportant commissions? A client, too, will be more willing to listen to the suggestion of his architect when he finds that they are based on the theory that good taste is not dependent on cost, and that successful decoration and finishing do not necessarily mean a large additional expenditure.

I have said that successful decoration in color must be based on the right apprehension of what appear to be inflexible natural laws. Let us see how these laws are ordinarily defined, and then proceed to apply them to the subject in hand. A beam of light falling on a glass prism in a darkened room is found to be split up into seven colored rays, or rather bundles of rays, which arrange themselves in the following order—red, orange, yellow, green, blue, indigo, violet. This is further confirmed by the same prism held before the electric lamp, and (more faintly) by colors in the rainbow. We also learn that these seven colors are capable of being reduced to three—red, yellow, blue,—which we consequently designate Primary colours, as we have failed to reduce them further. I am aware that much discussion has lately been caused by an effort to class green as one of the primaries, but I prefer for many reasons to follow the accepted arrangement.

I need scarcely remind you that red and yellow produce orange; blue and yellow, green; and red and blue, violet. These, then, are termed Secondary or composite colors; and, with the primaries and the addition of the colour indigo from the solar spectrum, you perceive they arrange themselves between the whole combination as they arise. All further derived colors, as the so-called Tertiary colors, may be regarded as colored greys, as more or less broken colours in which a primary or secondary predominates. Still further we are taught that, as yellow and blue produce the color green, that color is to be spoken of as the complements of red. That colour and the two forming green completing the primary trio, and so with blue and orange and with yellow and purple. These colours as I have just quoted them also form our first harmonies, as complete harmony depends on the presence of the three primaries in a composition. On the foregoing simple statement the whole of the science of color rests. I have placed on the wall a few diagrams which will make this still clearer, and which are also meant to illustrate the deductions which I now propose to draw.

If we place red and green side by side, we perceive that they mutually purify each other: this is the result of the law of contrast. It is so with black and white, and with the other complementaries, when so placed. If we look upon a bright red wafer for some time, we perceive that the white paper on which it lies seems to be faintly tinted where it touches the wafer with the complementary green. If, after gazing on it for some time, we remove the wafer, we find the space it occupied appears to be also tinted with the complementary green. Similar effects will, of course, be observed if we use wafers the color of the other primaries. We accept it, then, as an axiom that the primaries have a tendency to produce in their surroundings a tint complementary to themselves—red inducing, even in black, a greenish or bronze-like tint.

Again, it is found (as was to be expected) that colors mutually re-act on each other. Taking my first example red and green, should the red have a decided range of tinge

the green will look bluer; should the green be bluish, the red will appear orange-tinted; orange, the complementary of blue, will appear to have been added to it. Take a different example: if I have several pieces of scarlet cloth, and look at them in succession, although they be of exactly the same colour, cut from the same piece, they will seem after a time to have lost brilliancy; the fatigued eye has developed the complementary green, and the scarlet has been tarnished, all mixtures of the primaries being broken, dulled, or tarnished colors. We look for some time on a green color, and find the scarlet has been restored. It is an intuitive appreciation of these laws which causes the blonde to select blue and green to enhance the hair and complexion, and the brunette to prefer red or orange. You will perceive at once how a red head-dress will bronze the negro, or an orange enhance the natural blue-black of some races. These considerations will also suggest to you how all colors will gain in purity and distinctness by being separated by black or white, as thereby we neutralize this tendency to tarnish. The colors of the spectrum may be deepened or dulled by black, or lightened by the addition of white, or they may be altered by admixture with each other in varying proportions; thus we get tones and hues—terms often confounded. The tertiary colors illustrate this; they are olive, russet, and citrine:—

Olive	$\left\{ \begin{array}{l} \text{Blue} + \text{Yellow} = \text{Green.} \\ \text{Blue} + \text{Red} = \text{Purple.} \end{array} \right.$	Blue preponderates.
Russet	$\left\{ \begin{array}{l} \text{Blue} + \text{Red} = \text{Purple.} \\ \text{Red and Yellow} = \text{Orange.} \end{array} \right.$	Red preponderates.
Citrine	$\left\{ \begin{array}{l} \text{Red} + \text{Yellow} = \text{Orange.} \\ \text{Blue} + \text{Yellow} = \text{Green.} \end{array} \right.$	Yellow preponderates.

As the pigments which we use are never pure, each primary color being more or less tinged by its fellow primary and so with the rest, no combination of them will return to white or the absence of color, as in the case of the colours of the spectrum obtained from the solar beam, or by the electric lamp. In theory, the colours red, yellow, blue, should produce white, if combined in the proportion—yellow 5, red 3, blue 8; but painted on a disc or caused to revolve rapidly, the grey produced is tinted by the red and blue, and the resultant colour is generally a violet grey. Indeed, as I have said, all combinations of the primaries produced by pigments are dulled and broken, as you must have often perceived when red has accidentally been present in the mixing of green, and the tendency is towards black rather than white. The tertiary colours then, as they contain the three primaries, consist of greys produced by this admixture, coloured by the primary in excess; and these can, of course, be further combined so as to be distinctly dominated by a secondary. It is owing to this difficulty of admixture, and to save time in preparation, that the palette of the artist is being constantly added to by new pigments ready to his hand.

I would ask your attention to another peculiarity of the primaries and their combinations. The yellow is the most brilliant and obtruding color; the red warm, and occupies a middle place; the blue cold and receding; hence the yellow is suited for projecting surfaces, the red for hollows and middle distances, and the blue for the mass. In the figures I have quoted, you perceive the blue has an area equal to the two others combined. You see the effect of this brilliancy of yellow in the secondary orange, and its tinge in scarlet; the warm of red in purple, and its tinge towards blue in crimson; the coldness of blue in some greens; and the brilliancy of yellow in the new aniline color, where we have the luminous leaning towards yellow. In preparing colors it is, therefore, desirable that pigments to be combined should lean towards each other. In orange, for instance, that red should tend towards orange, and yellow should be free from greenish tint; in green, that the blue should be greenish rather than purple; and so on, the tendency to broken, or impure color being

* By Mr. C. H. Brien, A.R.I.A.I. Read at meeting of Architectural Association of Ireland, February 27th, 1873.

favoured by traces of the absent primary in the pigment, as already stated.

I said that colors are purified by being separated from each other by white or black. Let us see the effect of a ground of white or black on the colors. The general tendency of white will be to exalt colors by contrast of tone—of black to lower them, for the same reason; and yet there are changes respecting individual colors worth noticing. Yellow, for instance, will appear much lighter with black than white, in the former case having acquired a greenish tinge; blue will contrast most favorably with white, as will light green; red will be subdued by black by contrast of tone; while violet, for the same reason, will be improved. Contrasts of this kind are well seen in some of the national flags—the red, white, and blue of France; the red, gold, and black of United Germany; the white and green of Saxony. Perhaps grey harmonises best with the majority of colors, and, if slightly tinted with the complementary of the color, has a most pleasing effect: indeed, by the law of simultaneous contrast, this will occur in many cases without the actual addition of the tint. It is further to be noticed that the substitution of gold for yellow in decoration produces a marked change. Gold with black is lowered, whitened by contrast of tone; while with blue it is reddened, enriched by the development of the complimentary orange. I will have occasion to pursue this further in speaking of room decoration.

Let me now say something on the subject of modes of decoration generally as applied to architectural works, and on the application of these laws, which I have hastily sketched;—first, as to public buildings, and then to private dwellings. We have to travel over a large field, and within the limits of a single paper our review must be a cursory one. The grandest modes of colored decoration are—mosaics, frescoes, stained glass, paintings proper, marble inlays. In private dwellings color prevails in painting, hangings, carpets, upholstered furniture. The buildings most susceptible of decoration, of the costly class, are—churches, picture galleries and museums, theatres and public halls, palaces and the residences of the wealthy.

There can be no question that mosaic decoration is the most durable and suitable for works on the large scale; combined with colored marble in great masses, as at Venice and Rome, it leaves nothing to be desired. St. Mark's, which may be regarded as a museum of this class of decoration, is admittedly unrivalled. In recent times, through the efforts of Dr. Salviati and others, the ancient schools of mosaicists have been revived; and it is even possible to transport the finished work, and place it on the wall in the most distant places. We have a specimen of Dr. Salviati's work in this room, and at the Houses of Parliament, the Wolsey Chapel, Windsor; at St. Paul's; and the Prince Consort Memorial in Hyde Park, as well as in the artist portraits at South Kensington, we have admirable instances of its revival. In the case of the portraits in the niches of South Kensington you have also an opportunity of comparing the mosaic picture with the original drawing. The great merits of this mode of decoration are: the enamels employed are practically indestructible as regards material and color, the only possible weak point being the attachment of the component tesserae to their places in the composition. They are capable of the finest or coarsest mode of production, are suited for all points of view, and, by the addition of gold and silver, at nominal cost they can be of a richness with which no other decoration can compete. Recently the number of colors capable of being used has been largely increased. It has been objected that they are not capable of as flexible treatment as the various forms of fresco, that their peculiar glitter is unfavourable to distinct view, and that they are costly, and require to be surrounded by accessories as rich as themselves.

Now it must be remembered (taking the last objection first) that all decoration, carved

or colored, is open to this. I admit, when we decorate at all, it is hard to keep the balance—to know where to stop. Witness the panelling and panelled vaulting of the perpendicular period—the merest in art work which has made to Saint Chapelle a blaze of color, and which leaves no blank spaces externally or internally in Westminster or the restored crypt of St. Stephen,—a difficult problem about to be solved in the proposed completion of St. Paul's. But the principle of decoration in mosaic does not necessitate gorgeousness. The band surrounding the Albert Hall is in principle a mosaic. Its most effective works can be done by inferior hands, whereas in fresco the preparer of the original drawing must also do the completed painting if great excellence is to be reached. Its great durability—as I have more than once said, its natural accordance with marble and stone, as terra-cotta ornament with brick—must make us all long for its extension, and hail every effort to place it more within our reach. I don't think its glitter is a disadvantage, as it is peculiarly suited to dimly-lighted positions; on carved surfaces it gives the color a peculiar charm; and by a system of concentration and wide distribution of ornament, as is equally necessary with stained glass and frescoes. Except in the cases of practically unlimited expenditure I have named, this objection need not have place. Generally, it may be stated the figure subjects in mosaic are best placed above the line of vision; that the subjects should be simply treated, the scale large. I think the objection that Dr. Salviati's mosaic of the Last Supper, at Westminster, is too small a scale, has considerable force. There is much in common between mosaics and painted glass in these respects.

(To be continued.)

CIVIC LYRICS.—No. XXXII.

THE WATER SPRITE.

Risum teneatis amici.

The water runs waste, the gas escapes,
The Water Sprite cuts all manner of shapes;
The Council sit, and hear, and resolves,
And, having done nothing, wisely dissolves.

Good news from the Local Government Board
For him with "his harp his only board"
Comes swift on the wire by way of Dundalk—
"Sir Oracle shoulder your crutch and walk!"

A special meeting next day, at noon,
Shows spots on the face of the Man in the Moon,
Who to loftier realms did aspire,
So bolted off in a ball of fire.

Now water runs scarce wherever one turns,
And the hoops drop off our pails and churns;
And the milkmen stand like stags at bay
Since Turncock went on the Milky Way.

CIVIL.

CORRESPONDENCE.

ARCHITECTS AND THEIR ASSISTANTS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Many of your readers are no doubt aware that a great controversy on the important subject of the relation of the architect to his assistant and of the assistant to his employer, is at present being carried on in England. The professional journals teem every week with letters advocating on the one hand the claim of the assistant to take to himself the whole credit of the design which he may have helped to produce, and on the other the idea that an assistant should be considered as a mere machine, or rather skilled workman, who gets a certain piece-work or journey-work to perform, and does it, and is paid accordingly. Now these are two extreme views of the case; but, nevertheless, both in some instances may have more or less truth. Take, for instance, the case of an architect who has, by dint of his friends or connection—not by his talents—got a practice of greater or lesser extent, and whose ability as an architect is perhaps nil. This gentleman—who should never have embarked in a profession for which he was in no way qualified,—when employed to make a design, engages a party whose business it is to help architects in a similar strait. This artist generally advertises that he is able to make any design from rough sketches or otherwise, get up perspectives, competition drawings, &c.—in fact do any work in

the architectural line. (The trade must be a thriving one, for some advertise for pupils.) Well, he meets the principal; the terms for the design are arranged, and the "assistant," or whatever else you will, goes to work and prepares a design more or less of his own in proportion to the extent of direction given to him by his employer whilst he is making the design. In a case like this it is manifest that the design is not made by the architect who has been employed, but by another. This is an abuse that would not be tolerated in any art or profession but that of architecture. In some cases the architect takes another into his confidence and publishes his name in connection with his own as consulting architect. This is perfectly fair and business-like, but then the credit of the work is, of course, divided between the parties, which, we are sure, would be very galling (even to incapables) in a profession where it may be said the monsters Jealousy and Rivalry reign with undisputed sway. The other view of the case is this—An architect of ability, with a practice of any extent, is (to any one acquainted with the profession) incapable of doing with his own hands the manual labour of making all the plans or drawings which he may send out of his office; but he may in his mind conceive a design and, either from rough or finished sketches of his own, see that design worked out under his direction and according to his wishes. This, of course, gives a very different complexion to the affair. The assistant in this case is an assistant, and in his legitimate position. He may, after some years in his principal's office, come to design in precisely the same style as that of his employer, and therefore require less advice or direction. But although in such a case the principal may merely have given the roughest outline of his scheme to his assistant, the design is yet to all intents and purposes his, as much almost as if he had drawn every line of it himself, because the assistant has become educated to carry out his wishes and ideas.

The origin of the discussion on the relative position of architects and their assistants arose from the now famous competition for the new cathedral of St. Mary, Edinburgh. Six architect were invited to compete, amongst the number being a Mr. Ross, of Inverness. His design was considered one of the best. It was soon whispered abroad and darkly hinted by a contemporary that the design did not emanate from Mr. Ross at all, but from a clever London architect, whose name was for some time kept in the background; but when everything was prepared it was announced to be a Mr. George F. Roper, who, it appears, belongs to the class of men of whom I have first spoken. I do not wish to enter into the merits of the case, as I consider that Mr. Ross has been made the scapegoat of men who are in a greater or less degree as much to blame as he is himself; for, according to him, Mr. Roper claimed equal credit for the design. The discussion of this question could not be much longer delayed, as it has become an ever-increasing cancer in the heart of our profession. It is well known that Dublin architects employ others in this city to make their designs; and, what is blameable in less degree, perspective views of them. For the credit of our country and of the architects of this city, I would fain hope that it is a practice seldom indulged in. I have been informed that some architects send their drawings to London to be made and coloured; and it is rumoured in architectural circles that, in a recent English competition, a leading architect of this city imported (to use a theatrical phrase) "talent" to design the work.

AN ARCHITECT.

THE WATER-PIPE MONOPOLY.

In the early part of the year 1867, an arrangement was made with the Mining Company of Ireland, by which they were to supply the public with pipes made with an alloy of 8 per cent. of tin. This arrangement has been adhered to till the present time, the company enjoying the monopoly of supplying the pipes. Two highly respectable firms in the city engaged in the trade have protested against the continuance of such exclusive dealing, asking that "the pipes shall be put on the same free-trade principles as all the other fittings in connection with the water are." On Monday last the new rules were considered by the Town Council. When that relating to the supply of the pipes was brought on, after a considerable discussion it was passed unanimously that after the words "Mining Company of Ireland" in the rule, the following should be added:—"Or by such other manufacturers as the Corporation may from time to time name as persons to be added to this rule as having given equally satisfactory guarantees as to the suitability of the lead as given by the Mining Company of Ireland." From our lengthened knowledge of the firm of W. Curtis and Sons, and of the highly satisfactory manner in which the various branches of their business are carried on, we cannot avoid expressing our pleasure that they have been allowed to participate in the water-pipe supply of the city, which is, we consider, only "a simple act of justice."

ARCHITECTURAL ASSOCIATION OF IRELAND.

An ordinary general meeting of this association was held on the 27th ult., Mr. R. S. Swan in the chair. Members present—E. L. Clarke, W. Fennell, Wm. Butler, J. W. Bouchier, J. Allen, T. H. Longfield (hon. sec.), A. W. Robinson, D. J. Freeman, E. S. O'Callaghan, C. H. Brien, J. W. Knox, R. C. Millar, J. Coppings, and J. L. Robinson (hon. sec.). The following were proposed as members—F. Stokes and D. Duffy. Mr. Brien read a paper on "Colored Decoration," which will be found on another page. A discussion followed, in which Messrs. Longfield, Robinson, O'Callaghan, and the chairman joined.

NOTES OF WORKS.

The "Apprentice Boys" of Derry propose to erect a Memorial Hall in that city. They have purchased the ground on which stands Foy's Factory; it is parallel to the city wall, a street of narrow width only intervening, and within a few paces of Walker's Pillar and the Royal Bastion. C. E. Lewis, M.P., has subscribed £300 towards the building fund. The proposed building will be in style an adaptation of the "Scottish Baronial," and comprise reading room, Protestant Defence rooms, spacious lodge and club rooms, common hall, with caretaker's apartments, &c. The estimated cost will be about £3,000.

A new racquet court and billiard-room have been erected in the town of Carlow, for a joint stock company. About ten months since the first stone was laid on a very suitable site in College-street, given on easy terms by Henry Bruen, Esq., M.P., the carrying out of the undertaking being mainly due to M. F. Barnes, Esq., the active and efficient honorary secretary, who was ably seconded in his efforts by Captain Jocelyn Thomas, and Messrs. B. F. Bagenal, Steuart Duckett, James Butler, W. P. Kelly, and Hugh Doyle. The building, which has been erected in the most substantial style and to the entire satisfaction of the company, by Mr. Joseph F. Lynch, of Dublin-street, from plans prepared by Mr. Moncrieff, at a cost of something under £1,200, includes a racquet court, 60 x 30, lighted from the roof and well ventilated; the floor is of asphalt, supplied by the Val de Travers Company. A comfortable gallery for spectators divides the court from the billiard-room, which is a very fine apartment, 30 x 20, and is furnished with a splendid table by Harris. The fittings, &c., are complete and comfortable, and nothing has been left undone to make the undertaking a financial success, as well as a source of amusement to the patrons of the games. On the ground floor are suitable dressing and court-keeper's rooms, office, &c., the whole forming a very substantial building.

At Pollacton, near Carlow, the seat of Sir C. W. Cuffe Burton, Bart., there has lately been erected a handsome lodge, with large sweep entrance, having four ornamental piers and base course, massive iron gates and side railings. The walls are of finely-chiselled limestone from Royal Oak quarries, near Haghalstown. The iron-work was supplied by Mr. William Turner, Oxmantown Foundry, Dublin. The designs were furnished by Messrs. McCurdy and Mitchell. Mr. Joseph F. Lynch, Carlow, was the contractor.

THE SANITARY STATE OF THE CITY.

The Public Health Committee of the Corporation, having carefully considered the suggestions furnished to them by the Sanitary Association, are of opinion—

That as a chief medical officer of health has been already appointed in the city, and has always discharged his duties to the satisfaction of this committee and of the Corporation, no vacancy exists for the appointment suggested. That we cannot recommend the nomination of fourteen dispensary physicians as medical officers of health, inasmuch as those gentlemen are already charged with the execution of important functions, and as the duties suggested to be undertaken by them are already discharged satisfactorily by the eight sanitary sergeants and two superintendents, who devote their entire time to these matters, and daily and weekly report the results. The committee are of opinion that any increase to the staff would be best accomplished by the appointment of additional officers from the Metropolitan Police, who, from their training and experience, and the facilities afforded them as constables, such duties would be more efficiently discharged by them than by civilians. As to the appointment of a city analyst and secretary, both these appointments are filled since the appointment in 1866 of the Public Health

Committee, and both these officers have efficiently discharged their duties.

The formation of a staff for removal of the contents of ashpits has long engaged the attention of this committee, and many plans and reports on the subject have been discussed. Whilst fully recognising the utility of such a measure, great difficulty has been found in obtaining a site for the deposit of the refuse. The subject shall continue to engage the best attention of the Committee, who will be happy to receive any practical suggestions on the subject.

The Committee, when the necessity arose, applied to the different Dublin Hospitals, and ascertained from each the accommodation they could afford, and these reports remain on the minutes and accordingly the Committee availed themselves of the accommodation afforded, and subsidized such hospitals as far as occasion required, and are quite prepared to pursue a similar course should any epidemic visit the city.

As to conveyances for the sick, such conveyances were provided, and found sufficient, viz., two cabs, which were purchased by this committee. The work-house cabs, one at each side of the city, and the Cork-street Hospital cabs were also available, and utilized as occasion required.

The appointment of a magistrate for sanitary business only has long been under the consideration of this Committee, discussed and reported upon, and the Committee are of opinion that until the present magistrates are found to be unable, from press of business, to discharge this duty, the Government could not reasonably be asked to appoint an additional magistrate.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a meeting of the above Institute, Mr. Horace Jones in the chair, a paper was read by Mr. John Barber "On the Heating of Public Buildings and Churches." The author observed that there were two kinds of heat at the disposal of the engineer—namely, radiated heat and transmitted or circulated heat. He discussed the various modes of using the open, the hot-water apparatus, heated surfaces and plates, steam apparatus, hypocausts, Gill stoves and gas stoves, all of which systems he treated in a practical manner, concluding by summing up and deducing that any system of heating may be made successful, but in some positions and buildings one system is better than the others.

HOME AND FOREIGN NOTES.

DRY-ROT, ST. ANDREW'S CHURCH.—Owing to the development of dry-rot beneath the floors of this church, the boarding is being taken up and measures adopted for counteracting the spread of the evil. To control the insinuating fungus when once it makes its appearance in a building whose foundations rest upon such soil as exists beneath and around this church, it requires more than ordinary precaution. Thorough ventilation is all-important beneath the floors and elsewhere in connection with hidden or enclosed woodwork. Attention to drainage is also a matter not to be overlooked.

NEW CATHEDRAL MUSIC.—The *Daily Express* speaks highly of the "Magnificat" and "Nunc Dimittis" composed in C Major, for voices and organ accompaniment, by Miss Lizzie Wheeler, of the County Cork. The young lady in question is acknowledged to be an accomplished amateur soprano singer. Miss Wheeler's music is inscribed to Dr. J. C. Marks, the efficient organist of St. Finbarre's Cathedral. The music, which is clearly engraved, is issued from the house of Cramer and Co., London.

THE LOAN MUSEUM, EXHIBITION PALACE.—At a recent meeting of the Council of the Loan Museum, Sir Arthur Guinness stated that he and his brother were willing to do all in their power as individuals to further the interests of this department; and, pending the time, which they must hope is approaching, when Government, in obedience to an enlightened public opinion, would afford to art in this country similar encouragement to that afforded in other parts of the United Kingdom, they would be willing to give a temporary home to a Loan Museum of Art Treasures in their building, and to bear all pecuniary responsibility attending it for a period of another year, to be renewed or not according to circumstances.

IMPROVEMENTS IN GAS MANUFACTURE.—A simplified gas generator, called Vincent's patent, is described by its inventor as not only applicable for use in gas works, but may also without danger or inconvenience be fixed up in private dwellings for illuminating and heating purposes. In this invention

a cylindrical retort is placed within a portable furnace. The mouth of the retort, which is conical in shape, is covered without being sealed, and a removable grating is constructed inside, through which the tar is allowed to flow freely from the charge, after which it is consumed and manufactured into gas. Thus, what is refuse tar by other operations is by this process utilised, and a saving of 25 per cent. effected. Several experiments were made with perfect success before a number of scientific men, who met to inspect the apparatus and hear the explanation of its inventor at his office in London a few days since.

SANITARY PRECAUTIONS.—Dr. M. J. McCormack the Medical Officer of Health to the vestry of Lambeth, London, in view of the gradual approach of cholera to the west of Europe, has republished his short treatise on the connection between cholera and electricity. His object is to show in what way the human economy is affected by the amount of electricity in the atmosphere, and to trace cholera epidemics to the comparative absence of positive electricity. Many interesting facts and illustrations are gathered in support of this theory—which is almost identical with that of Dr. Shrimpton, of Paris,—and not the least noticeable of these is the curious manner in which this theory coincides with the known effects of fear in predisposing to cholera, and with the most probable explanation of the "cholera blue mist," which has been remarked upon. Dr. McCormack recommends any treatment which will increase the amount of positive electricity in the atmosphere or in the individual, and has an especial reliance upon camphor water taken inwardly as a prophylactic.

The estimated cost of the Vienna Exhibition is a million and a-half sterling.

TO CORRESPONDENTS.

TO CORRESPONDENTS IN GENERAL.—Some letters on social, sanitary, and professional matters must stand over until next issue.

CURRENT LITERATURE.—Notices of the magazines and other publications received too late in the month to be attended to, will be reviewed in our issue of the 15th inst.

EDINBURGH CATHEDRAL CONTROVERSY.—The gentlemen who have written to us upon this subject only see the subject in one light. We will not play into the hands of any party. Turk, Jew, or atheist, Scotty, or Saxon—each should have fair play. In competitions somebody must come off second best; and in architectural competitions to be second best, we see, excites as much professional jealousy among the rejected as if but one prize was to be obtained.

SANITARY.—Shall be attended to. Thanks.

"A VISIT TO EPPE'S COCOA MANUFACTORY."—Through the kindness of Messrs. Eppe, I recently had an opportunity of seeing the many complicated and varied processes the Carac bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Carac, and the way it is manufactured by Messrs. Eppe, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPE & CO., Homoeopathic Chemists, London." Also, makers of Eppe's Cocoa, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Eppe and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbast-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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The Irish Builder.

VOL. XIV.—No. 318.

Port and Docks Improvements.



THE Dublin Port and Docks Board have issued a statement of their accounts—receipts and expenditure—for 1872, in the form of a blue book. It is a very dry, yet very useful, document, and contains a good deal of information worth knowing connected with the cost and management of the pilotage of the port, the Customs House Docks revenue and capital, the quay walls, Balbriggan Harbour, and the improvements now being prosecuted in the Port of Dublin. Last, though not least, we have a statement of the registered tonnage that entered the Port of Dublin from the year 1786 to 1872 inclusive. This register will be found most useful to any writer engaged in drawing up an account of the rise and progress of the maritime ports of Ireland during the present century.

More in our way, however, is the matter under the head of "Improvements," from which we learn a few matters of interest. Respecting Sir John Rogerson's-quay, the contractor, it is stated, has finished the eastern extension of this quay, and is making satisfactory progress with the deepening of Great Britain-quay, the wall of which is built to the length of 250 ft. The sum of £26,001 has been paid on account of these works within the year 1872, making a total payment of £65,379 1s. 9d. on both contracts. Of the North Wall extension a total length of about 300 ft. of quay wall is completed, and a further length of blocks laid to the extent of 120 ft. The backing of the wall for the formation of the roadway is also progressing. From this berth a large vessel was discharged in December. The deepening of the North Wall steam berths is proceeding, a total length of about 600 ft. of quay wall having been built since the commencement of the contract. For the work of last year in connection the sum of £16,813 16s. 11d. was paid. The new steam dredger has been at work for some months, and three hopper-barges are in course of construction. The wharf for the coal trade has been completed, and the balance of £3,577 19s. paid to the contractor. Connected with wharf extension, the Board has entered into a contract for extending the wharf adjoining the Bristol and Glasgow Company's berth, North Wall, by 90 ft., for the accommodation of sailing vessels.

Next comes a matter to which we desire to draw the attention of our readers, for more reasons than one. *Whiskey and stone* are the very opposites of each other—one is a *flooring* fluid and the other is a *walling* solid. The man who makes too free with the former will very often have to look for support to the latter to preserve his equilibrium, so in these latter points there is a connection between whiskey and stone. More whiskey vaults are needed in connection with our Custom House Docks; so, to meet the increasing demand for storage accommodation, the Board has entered into a contract for the construction of a range of vaults extending from the Dublin and Drogheda Railway

Terminus to the main entrance to the docks at Amiens-street, at a cost of £4,985. The Board alleges, as a reason for the delay in the completion of this work, "the difficulty experienced in procuring the proper description of stone." We differ from the Board here, and we are somewhat astounded to hear that there can be any real difficulty existing at all. Surely we have afforded information enough in our articles on "The Building and Ornamental Stones of Ireland," during the last two or three months, to convince the most sceptic that every description of stone suited for such a work as the present can be had in this country in abundance.

Respecting the sale of surface ground, the Dublin and Drogheda Railway Company, being desirous of improving the approach to their terminus, applied to the Board to sell them the surface ground above the vaults for a width of 40 ft., in order to construct an inclined roadway. As such an improvement, in the opinion of the Board, would be a public advantage, the Board agreed to let the railway company have the ground at the rate of £3 per square yard. Before the necessary steps are taken, or rather before the company obtains the sanction of Parliament to complete the purchase, it would not be amiss to consider again whether £3 per square yard is a great deal too little or a great deal too much. Viewing this purchase, the general public may be inclined to consider whether railway companies obtain decided advantages or not in contradistinction to individual purchasers.

Coming to the subject of Essex Bridge improvement, all the progress yet made is that the plans have been amended, and tenders invited for the work are under consideration. The alterations of the plans were necessitated by the proposed alteration of the line of quay walls to suit the main drainage works.

The amount due on the 31st of December last on the mortgage bonds of the Board towards the expenditure incurred in the improvement of the port was £94,000.

We do not find a word at all about Carlisle Bridge in this report, neither do we hear an echo from the City Hall on the subject, although the improvement of Carlisle Bridge, from the number of years it has been before the public, should have precedence. Of course we hardly expected to meet in the Port and Docks Board account any statement about a work which, although talked of and made almost an election cry of in this city at one time, yet still nothing has been practically done in the matter. A number of plans and designs were of course elicited under something very like false pretences, but the matter is conveniently shelved, and will no doubt crop up again and again, like the new boulevard alongside south of the Liffey, and the new street *via* Cork-hill to Corn-market.

It would be a matter much to be desired if all public bodies, corporate or otherwise, published a clear statement of their income and expenditure, like the Port and Docks Board. If they did, just suspicions would be allayed, and urgent public wants would meet the attention they need.

LESSONS FROM THE CENSUS.

BUILDING AND THE BUILDING TRADES.

THE history of the building trade of Dublin for the last century, if properly written, would form one of the most interesting volumes ever produced. It would be neces-

sary to go back a century, for the purpose of showing the gradual rise and progress of the building art in this city, from the date of the erection of the Royal Exchange. About that time the architectural and the building trade received a fresh stimulus, and continued to advance down to the close of the century. In 1769 the merchants of Dublin offered prizes for the best designs for the new Exchange, and several English and native artists competed. Cooley and Gandon obtained the two first premiums, £100 and £60 respectively; and Mr. T. Sandby, another London architect, received £40. Thomas Ivory, a native architect, sent in two designs, and they were considered so good that he was awarded pieces of plate, as were also some other native competitors. Robert Mack, the architect of Powerscourt House, William-street, and of other city buildings, was also among the competitors. Throughout the succeeding period, and on through the eighteen years of the native parliament, the streets of Dublin—which, in other words, means the buildings—increased rapidly, and many fine city mansions and public institutions were erected. A surprising increase took place during these years in the number of the building trades of Dublin. The profession of the architect—which, previous to 1770, had been almost non-existent in Ireland, and, where existing, embodied in that of the mason, carpenter, or builder—began to show itself in a more marked manner by standing alone, and asserting its dignity and claiming its proper recognition. We do not propose, however, at present to go into the history of the profession, and what we have said is only a glance retrospective and incidental to our subject.

Looking at the census return for 1871, we find the number of new houses building in that year for both county and city only 197. The Dublin Metropolitan Police District embraced 148 of these, and the thirteen Petty Session districts only 49. The total of inhabited houses in the county and city was 50,754; uninhabited, 2,894; while the population of county and city was 405,262, numbering 188,108 males and 217,154 females. In the Dublin Metropolitan district the population was 386,600. The following figures, representing the six census periods including 1821 to 1861, are worthy of the attention of all who are concerned with house property or building:—Inhabited houses in 1821, 39,358; uninhabited, 1,813; building, 89. In 1831—uninhabited houses, 39,861; uninhabited, 2,025; building 521. In 1841—inhabited, 42,221; uninhabited 3,002; building, 237. In 1851—inhabited, 45,927; uninhabited, 4,170; building, 276. In 1861—inhabited, 48,009; uninhabited, 3,211; building, 384. In this last census return the character of the houses down to the lowest may be ascertained from the arrangement adopted; they are arranged under four classes, according to the accommodation or structure of the houses. The first-class accommodation, consisting of first-class houses occupied by one family only; second-class accommodation, consisting of second-class houses occupied by one family, or of first-class houses occupied by two or three families; third-class accommodation comprises third-class houses with one family each, or second-class houses with two or three families, or first-class houses occupied by four or five families; fourth-class accommodation includes all fourth-class houses, third-class houses with more than one family,

second-class houses with four or more families, and first-class houses inhabited by six or more families.

The decline of several of our streets formerly resided in by the wealthy and noble, has rendered it necessary for the owners of the house property to let them in tenements, so that houses that were formerly only occupied by one family are now occupied by six or more—yea, even as many as a dozen of families. In the present census returns the fourth class of houses is divided for the first time for the purpose of showing, the number of mud cabins still existing in the country, as distinguished from the small cottages built of brick or stone. Mud cabins are gradually disappearing as a whole, but they are still too plentiful over the country, and in the county of Dublin they are more numerous than we should like to see them. The sooner they are improved off the face of the soil, the better will it be for the education and morals of our people. The number of families occupying houses of fourth-class accommodation in the rural districts of Dublin, in houses built of brick or stone is only 633; while in the mud cabin class, the families amount to 1,056. In the civic districts the number of families occupying houses of fourth-class accommodation built with brick or stone is 126; of mud cabins 120, nearly as equal numbers. There is plenty of work for the sanitarian, the engineer, the architect, and builder in this county and city of ours, judging from the Census.

We will now adduce a few figures more intimately connected with the state of the building trade. Of architects in the city only 49 are returned, of all ages, some of those also figure among these returned in the county; surveyors, 14; builders, 190; carpenters and joiners, 2,117; marble masons, dealers, and polishers, 94; bricklayers, 674 (query); masons, paviors, 221; slaters, tilers, 331; plasterers, 276; paperhangers, 10; plumbers, painters, glaziers, 1,968; others, 63. Some of the above figures will appear to many as not correct. For instance, that there are more than fourteen surveyors in the city, even professional ones, more bricklayers, and more paperhangers. Some of our bricklayers, however, work as ordinary masons, and a great number of our painters and glaziers are also paperhangers, independent of those who chose to return their names as such. The carpenters and joiners figure as the most numerous body, and they have always been more numerous than the other building operatives.

In looking over a volume of the *Irish Magazine* for 1811 we find the following interesting paragraph, which will help to show the activity of the building trade at the close of the last, or beginning of the present century. "In the year beginning January, 1810, not more than thirty houses were built in Dublin, while in the same period, by an Official Report before us, it appears that 648 were built and finished in New York; and further, the decline of Dublin may be evidently proved by the decrease of our artificers. In the year 1798 there were 2,661 regular journeymen carpenters in the body, as they term it, besides a considerable number who are not deemed regular by the others, not less than 1,000. In the year 1810 the journeymen carpenters amounted to no more than 221!!"

If the above statement be correct, and there is no reason to doubt its correctness,

it shows the dreadful falling off that occurred during one short decade after the passing of the Union, and the withdrawal of a great portion of our nobility and gentry to London. With the small population that Dublin contained in 1798 or 1800, it is marvellous to think that there were 3,661 carpenters and joiners, and that upwards of seventy years later, and with our present population, there is only to the number of 2,117 returned. Of course, the county, independent of the city at each period, is not comprised in the above numbers, although a few of the carpenters in the regular body in the year 1798 may have belonged to the county.

Many of the carpenters of Ireland who left our shores between 1800 and 1810 helped to build up New York and the cities of the early states of America.

The number of houses we find returned in the Census as being in process of building in the city and county of Dublin in 1871, can hardly be correct, and those of 1861 are open also to doubt. Something looks very strange about the figures 384 in 1861, and only 197 in 1871. Building was very rife in 1858-9 in Dublin, and if the Census was returned for either of these two years, we think that the number of houses building would be found to greatly exceed 384. Houses are sometimes returned as building when they have been completed to all intents and purposes, but have not yet obtained their new tenants. In these cases they ought to go into the number of uninhabited houses.

A Census Report is a most suggestive document for those who wish to increase their knowledge and improve their thinking facilities by comparison and analysis. Enough for to-day is touched upon, but as the topic is a matter of importance, we will likely return again for the purpose of extracting further lessons from the Census.

OUR SANITARY REGULARS AND SANITARY VOLUNTEERS.

In our last issue we gave the reply of the Public Health Committee to the application made by the Sanitary Association for increasing the staff of sanitary inspectors, and providing for other urgent wants attaching to the same. We never thought the Corporate body would accede to the request, and we are almost certain that there are a number of members in our local body who would doggedly and ignorantly procrastinate, even though Asiatic cholera had swooped down its first batch of victims. We do not mean to say that we subscribe to the whole *modus operandi* proposed by the Sanitary Association. Still, the reasons that body urge for increased precautions are undeniable. Many are of opinion that the Public Health Committee of the Corporation have grown jealous, and as that body has evidently been lately forced to act second fiddle in sanitary matters, hence their non-compliance with the request of the Sanitary Association. It is indeed deplorable, in such a vital question as the public health, that the body instituted to attend to that health will not move in the right direction, or even move to any useful purpose out of their usual groove.

In a document put forward by the Sanitary Association, we find the following:—

"The committee, while they abstain from expressing any opinion as to the manner in which the police officers employed by the Public Health Committee discharge their duties, desire again to express their unaltered conviction that the present staff of inspectors is altogether insufficient for the requirements of the city, and should be largely increased. This insufficiency was freely admitted by several members of the Corporation at the recent conference, and this committee beg to refer, in fur-

ther confirmation, to your letter of the 8th of October, 1872, in which you state that, through inability as to means, and to obtain more, your committee were unable to adopt our suggestions. This committee have again to express their conviction that the sanitary state of such a city as Dublin can never be placed on a satisfactory footing without a complete system of district medical supervision, which does not at present exist. Such medical supervision would not in any way tend to supersede or interfere with the duties of the sanitary inspectors, and the committee are still of opinion that no better arrangement can be adopted than that of appointing the fourteen medical officers of the dispensary districts to be district medical officers of health, as already suggested. This committee consider that the important functions already discharged by the dispensary medical officers qualify them in an especial manner for the efficient performance of the duties of district medical officers of health. This committee regret to learn that a scheme for the removal of refuse has not yet been fully resolved upon. They trust that the Public Health Committee will soon be in a position to make a more definite statement as to the progress made towards the formation and carrying out of such a scheme, which they regard as a matter of vital importance. This committee desire to express their great regret that their recent interviews with the Corporation and the Public Health Committee have not led to more satisfactory results. From the answer to the suggestions offered by this association, it would appear that the Public Health Committee are satisfied with, and intend to rely on the very defective and insufficient arrangements which prevailed during the recent epidemic of small-pox, and which probably will be attended with similar fatal results on the recurrence of the next outbreak of disease; and should the Public Health Committee persist in these refusals to adopt the obvious precautions pointed out to them, Dublin will over and over again experience the lamentable results of being unprepared to meet an epidemic. Under these circumstances, a grave responsibility will rest with those who, after repeated warnings, have shut their eyes to impending danger, and, with the power to remedy the evil, still neglect to do so. This committee do not desire to urge the adoption of any measures which are not both highly necessary for the welfare of the city and practically feasible, or any which should involve unreasonable expense in carrying them into effect."

We again repeat what we have so often stated before, that the danger to which this city is always liable under the present system of sanitary inspection could be averted. If all our warnings and the warnings of others who have closely examined the condition of this city are neglected, may the scourge, whatever it may be, strike indiscriminately the rulers and the ruled! In this wish of ours we show even a feeling of mercy (totally undeserved) to those who, if they will not move *at once*, ought to be indicted hereafter as conscious criminals, if our city should suffer.

HOME AND FOREIGN NOTES.

THE LATE FRANCIS ROBINSON.—With a view to perpetuate the memory of the late Francis Robinson, Mus. D. (so long known in connection with our Cathedral) it is proposed to place a tombstone over his grave in St. Patrick's churchyard, and to erect a stained glass window in Christ Church Cathedral, now being restored.

THE NEW GRAVING DOCK, LIMERICK.—The new graving dock will be ready for opening about the beginning or middle of May. The Lord Lieutenant (for the time being) is to be invited to attend.

ROYAL DUBLIN SOCIETY.—At the Scientific Meeting to be held in the Theatre of the Royal Dublin Society on Monday evening, Professor Reynolds will read a paper on "An Improvement in the Measurement of the Illuminating Power of Coal Gas," and Alexander MacDonnell, C.E., will give "Notes on Peat."

"ST. PATRICK AT TARA."—Professor Glover's Cantata, "St. Patrick at Tara," will be performed this evening at the Antient Concert Hall, with full orchestra and chorus. The proceeds will be given in aid of the Mansion House Central Coal Fund.

THE TRAMWAYS.—The Commissioners of Blackrock Township have resolved to petition Parliament in favour of the extension of the tram line to their district. The Clontarf line is being pushed on vigorously, and will be completed in the course of next month.

GARGOYLES—YORK MINSTER.

WITH present number we give sketches of Gargoyles from York Minster. Nos. 1 and 2 are taken from the Parapet of the North Aisle. Nos. 3 and 4 are taken from the East End. We reproduce them for the purpose of showing that there is an amount of life and originality in the conception of such nondescript monsters which might profitably be copied in many such details of the present day.

IRISH LIGNITE COAL.

EFFORTS have been made in Belfast to develop the lignite coal-beds of Ballintoy. A committee having been appointed in January, pursuant to a meeting held in the Chamber of Commerce, to report upon the subject, the result of their labours have been made known at a public meeting. As the report is a brief one, we annex it:—

"Your committee, appointed at a public meeting, held in the Chamber of Commerce, on the 20th January, 1873, for the purpose of bringing a quantity of Ballintoy lignite to Belfast to be tested, and to bring up a report thereon at a future meeting, beg to report that in undertaking the duties imposed upon them, they hoped that the subscription list opened by the meeting that appointed them would have furnished a sufficient sum to properly test the nature of the Ballintoy lignite, and the resources of the colliery. Your committee were, however, disappointed to find, after waiting for a reasonable time, that the entire sum subscribed did not amount to £50—a sum in their opinion totally inadequate for the purpose, and such as would have justified them in declining to proceed further with the matter. Your committee, however, resolved to open the mine, and to bring as much coal into town as the small sum at their disposal would admit. With the assistance of Mr. Gray and Mr. Herdman, C.E., they were enabled to clear what is known as Limeneigh Mine, of water, open up the levels, and expose beds showing a face of coal from twelve to thirty inches thick. Another mine was opened in Black Park, and a new level was driven some distance, showing two beds of coal from twelve to eighteen inches each. From the Black Park Mine your committee were enabled to bring to Belfast about eighteen tons of lignite, which they have distributed throughout the town, to be tested, in quantities varying from fourteen pounds to one ton. About one hundred samples were thus distributed free of cost, on condition that the recipients would report the result. This course gave all who were interested in the matter an opportunity of proving the quality of the coal for themselves, and your committee were furnished with the results of many such in various ways by independent persons, the general tendency of which shows that the lignite would be acceptable as a substitute for Scotch coal, if it could be put into the market at about 15s. per ton."

There would seem to be both apathy and obstacles to be contended with in developing this small native industry. Sufficient practical evidence has been elicited on all sides in Belfast, to prove that their lignite would serve all useful manufacturing and household purposes, if brought into the market at 15s. or 20s. per ton. Messrs. Craig and Ellison, of Dervock, reported that they found the lignite to blaze well, and that 1lb. yielded a heat equal to 1lb. of Scotch coal. Mr. Dickson, of Ballymoney, spoke in its favour. Messrs. Musgrave, who made comparisons for the object of comparing it with both coke and Scotch malting fuel for their stoves, said they found 28lbs. of clear, picked lignite produced about the same effect as the same quantity of Scotch malting coal, and the same as 17lbs. of gas coke. Mr. Dawkin, Inspector of Factories, said that by abstaining to use the poker, except to clear the lower part of the grate from ash, a fire could be procured equal to ordinary coals. Mr. Baxter, a working engineer at the workhouse, who made some experiments, proved that 8lbs. of lignite evaporated 30 or 33 cubic feet of water into steam, at a pressure of 12lbs., boiling 5.64 of water for 1lb. of lignite; 3 cwt. of Scotch coal in the same time, and under the same pressure, converted 34.12 cubic feet of water into steam, and 6.34lbs. of water boiled for each pound of coal used. Another engineer re-

ported that in ten minutes he had 50lbs. pressure, and he could guarantee there were fifteen gallons of water in the boiler. He approved of the coal, and wished there was plenty of it at 15s. per ton. Mr. Gray had received orders for upwards of 2,000 tons of lignite if he could supply it. It happens that the exact locality where the best lignite can be worked, is next the property of a resident proprietor, but belonging to a Mr. Fullerton, the landlord, residing in London. If Mr. Fullerton move at all, it will be to work the mine himself. So here crops up an obstacle to the efficient working of the lignite bed of the district, which will never be efficiently worked except by a good company. There are several persons in Belfast who would become shareholders. If the landlord would treat liberally with the proprietors, a new company could be established at once; but before moving actively in the matter, it should be known under what condition could royalties be procured. If favourable conditions existed for working these lignite-beds in Ulster, we think they would be worked, yet we cannot but think the people of Belfast themselves have not on this occasion shown sufficient spirit in the projected enterprise.

CIVIC LYRICS.—No. XXXIII.

"CON OF THE HUNDRED BATTLES."

Each bard of old be-praised his chief,
Whose throne was built of wattles;
The palace sometimes came to grief,
And led to a "Hundred Battles."
So it was with the mighty Con,
Who broke more skulls than lances,
And gave a plaster to each one
He crushed in his advances.
History now repeats itself:
Another Con has risen,
Who floors his foes like brittle elf,
And fears no fine or prison.
Our Civic Con he owns no laws
That rival chiefs can pillage,
Yet our Con of a hundred cows
Can boast some mental tillage.
He's always pregnant with good schemes
And "mighty grand" suggestions;
He acts upon his own sweet dreams,
And moves on myriad questions.
Great Etna may blaze out in ire,
Earthquakes rend the Equator;
But nought is equal to the fire
Of Con's consuming orator.

CIVIS.

THE SEWERAGE OF NEW YORK.

FROM what follows it will be seen the gigantic extent of the sewerage of New York, the sewers of which are built of stone and brick, the cost of keeping them clear, and the present condition of the drains and culverts. The particulars are worthy of attention, and as a contrast to our puny efforts in this city:—

"Of the 286½ miles of sewers in this city 219½ miles are built of brick and 67½ miles are of vitrified stone pipe. The use of the pipe for sewers was first introduced in 1865, and for several years the cost of cleaning them was less than ten dollars per mile per year, while the cost of cleaning brick sewers in 1868 was \$239 per mile. Up to the accession of the present Commissioner of Public Works, Mr. Van Nort, the sewers were cleaned by contract, a stipulated price being paid for each cart-load of dirt removed from them. During the last six years the cost of cleaning sewers was as follows:—In 1867, \$143 30 per mile; in 1868, \$198 34; in 1869, \$108 28; in 1870, \$173 55; in 1871, \$157 42; in 1872, under the present administration, by day's work, \$50 26 per mile, or less than half the cost of cleaning during any previous year. The relative cost of cleaning brick and pipe sewers last year was about two and a half to one, it being \$58 88 per mile for brick sewers and \$22 13 per mile for pipe sewers; the cost of cleaning pipe sewers includes the removal and replacing of broken pipes and other repairs. In all cases where pipe sewers required much cleaning or repairs it was due to the imperfect manner of their construction. When pipe sewers are constructed the pipe is tested and furnished to the contractor by the Department, and, if skilfully and carefully laid, will work for many years without cost for cleaning or repairs. If sewer pipes were laid by day's work, under rigid superintendence, like the

Croton water pipes, they could be made not only as durable as brick sewers, but far less expensive to clean and maintain, and much cheaper of construction. The average cost of branch pipe sewers is from \$3 25 to \$4 75 per lineal foot in earth, and \$6 per lineal foot in rock excavation. The average cost of branch brick sewers is \$6 per lineal foot in earth, and \$7 50 per lineal foot in rock excavation. In each case the cost of rock excavation is additional to the above at \$4 per cubic yard. A larger excavation is required for brick sewers than for pipe sewers, making the cost of the former nearly double that of the latter. For large main and outlet sewers brick is preferable; but a large portion of the old sewers in the lower part of the city, which are rapidly becoming useless, and even dangerous to health and property, could be replaced with pipe sewers at comparatively small cost and great advantage to the community. Pipe sewers can be laid very rapidly, especially by day's work, thus offering very little interruption to the drainage of houses in replacing old sewers. It is estimated that 100 miles of the old sewers are unserviceable. To replace them with brick sewers would cost at least \$32,000 per mile, or \$3,200,000 in the aggregate, provided no additional excavation should be required. To replace them with pipe sewers would cost \$17,160 per mile, or \$1,716,000 in the aggregate."

THE ROYAL HIBERNIAN ACADEMY EXHIBITION.

THE annual exhibition of works in Painting, Sculpture, and Architecture in this Institution has commenced.

Respecting some of the objects upon view we may have to say a few words in our next issue. What are our native architects thinking of, that they have not put in a proper appearance, in an Institution founded by one of their order, who was an ornament to his profession and country?

THE ROYAL DUBLIN SOCIETY—SANITARY LECTURES.

WE are glad to see that the chief subject-matter of these sanitary lectures is to be thrown into pamphlet shape in the form of "Notes" on the different matters treated. We suggested in our last issue that this ought to be done, and now we are in possession of Professor Reynolds's lecture issued as a Dublin Society tract, and printed by Mr. Alexander Thom. This is the way to make these lectures eminently useful; and, by being issued in a handy shape, their distribution can be carried out with advantage. First, the newspaper or journal can give the lectures a widespread publicity among the circle of their various readers, but in the shape of "Sanitary Tracts," pushed into the homes of thousands, the information will have a fourfold beneficial result.

PRESERVATION OF ANCIENT NATIONAL MONUMENTS—A bill to provide for the preservation of Ancient National Monuments (says the *Athenæum*) has been printed by order of the House of Commons. Sir J. Lubbock, Mr. Beresford Hope, Mr. Bouverie, Mr. O. Morgan, and Mr. Plunket, have endorsed this new attempt to secure our ancient monuments from destruction. The remains it is intended to protect include mounds, tumuli, barrows, cromlechs, cairns, tombs, dolmens, menhirs, earthworks, walls, dykes, fosses, caves, excavations, structures, works, stones, or circles or collections of stones, "together with the sites thereof," and any parts of any such monuments. It is proposed to appoint the Inclosure Commissioners to be Commissioners for the purposes of the Act, together with the Master of the Rolls, the Presidents of the Societies of Antiquaries of England and Scotland, the President of the Irish Academy, and the Keeper of British Antiquities in the British Museum. These gentlemen, too, have powers, under the Treasury, to protect remains of the kinds specified which are not within any park, garden, or pleasure-ground, and do not form parts of any fortress or ecclesiastical edifice. Injurers are to be subject to penalties and payment of expenses, to be recoverable as debts are. The Bill comprises schedules of monuments in England, Wales, Scotland, and Ireland. None is mentioned in the Channel Islands, but one in Cornwall, one in the Isle of Man, and only Caesar's Camp in Surrey. We trust some Bill of this sort will be passed, although far more monuments need stringent protection. We should like to hear of an Act to restrain deans and chapters from "restoring" the buildings in their custody,

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

ARDMORE.

THERE is not, perhaps, in these islands, a more remarkable and interesting spot than Ardmore; its history, traditions, and ancient remains at once awaken the enthusiasm of the antiquary, the architect, and the churchman; and yet its ruined buildings are by no means remarkable, either for size or architectural detail, their chief interest being their great age, quaintness, and singularity of their parts. Ardmore is a small fishing village situated on a shallow bay of the same name, in the barony of Decies within Drum, and County Waterford, and gives name to a parish and deanery in the Diocese of Lismore. It is picturesquely situated at the south side of the bay on a rising ground, hence its name Ard-Mor, i.e., the Great Height, as the hill rises considerably above the village. It is much frequented in the summer season by visitors for sea bathing.

It owes its celebrity to one of the primitive fathers of the Irish Church named Declan, whose memory is intimately associated not only with this locality, but with the surrounding districts of Waterford and Cork. Previous to the mission of St. Patrick, and in the pontificate of Celestine, Palladius was sent by that pope "to the Scots believing in Christ." While there can be no doubt that the great work of the conversion of the Irish must be attributed to our national saint, it is equally certain that the good seed was sown previous to his mission. Upon this head Ware has the following remarks:—"It is certain there were many Christians in Ireland, before the Arrival of Palladius in 431, or of St. Patrick the year following. St. Kieran, St. Ailbe, St. Declan, and St. Ibar, whom Usher calls the Precursors or Forerunners of St. Patrick, are pregnant Proofs of this. They were of the Birth of Ireland, from whence they travelled to Rome in search of Education and Learning; where they lived some years, were ordained, and returned home about the year 402. That there were some few Christians in Ireland, even before this time, may be gathered from the lives of St. Declan and St. Ailbe, as they are quoted by Usher: for Declan is there said to have been baptised by one Colman, a Priest, and Ailbe by a Christian Priest, possibly the same Colman, and Declan, when he was seven years old, was put under the tuition of Dymna, a Religious Christian, to learn to read; and Cairbre was his School fellow."—(Ware; *Antiq.*, vol. i., p. 10.)

Colgan, in his *Life of St. Kieran*, bears out the above statements (*Acta Sanct.*, p. 458); so also does the Abbe Mac Geoghegan, in his *Hist. of Ir.*, p. 146. Dr. Lanigan, though he endeavours to place Declan at a later period, admits that the seeds of Christian truth were sown in Ireland previous to St. Patrick's mission, and cites as fruitful evidence of it Sedulius and Celestius; he also admits, that Declan, Ailbe, and Ibar, were "partly contemporaries" of St. Patrick.—(*Eccles. Hist.*, vol. i., p. 22.) There can be scarcely a shadow of doubt that St. Declan flourished in the early part of the fifth century, and that the first church or oratory at Ardmore was erected by him. Ware states that St. Declan was first bishop of Ardmore, but that "after the arrival of the English in Ireland it was united to the See of Lismore" (p. 548).

The pedigree of St. Declan is given by Smith, from a MS. life of the saint quoted by Usher, in his *Primordia*, as follows:—"Eogan, son of Fiachadh-Suidhe, begat Carbry Righ-Ruadh, who begat Conry-Bello-victor or the warlike, who begot Cuan-Cambreathach, who begot Mesfore, who begot Moscegra, who begot Moscorb, who begot Art-corb, who begot Eogain the 2nd, who begot Brian, who begot Niath, who begot Ludhoieh, who begot Trene, who begot Erc, who was father to St. Declan."—(Smith; *Hist. Wat.*, p. 80.) All writers agree that Declan

was of the tribe of the Desii, that warlike race who for their fierce and restless habits were driven from their original patrimony in the vicinity of Tara, in Meath, about A.D. 273, and who were received into Munster and allotted land in the present County Waterford, their name being still preserved in the two extensive baronies of the Decies.

Declan, according to his MS. life, was the son of Erc, a chief of the Desii; his mother's name was Dethidin. Both being on a visit at the mansion of another chieftain named Dobran, a relative of Erc, she was delivered of Declan. Ere they departed from their friend's house, a holy man named Colman, who was subsequently made a bishop, happening to come that way, was hospitably received by Dobran; and preaching to them the Christian truths, they were gladly received by the household, who became converts to the new faith. Colman baptised the infant, and prayed for his future usefulness. Dobran was so impressed with the circumstances of his birth that he begged of his relatives to allow him to rear him, to which they agreed. When seven years of age, he was given in charge to Dymna, a learned and godly Christian, who, after travelling much abroad, had returned to his own country. He does not appear to have been an ecclesiastic; he devoted himself to the education of Declan and another pupil named Cairbre, to whom the former became much attached. When he had attained to a knowledge of what his master was capable of imparting to him, and had come to manhood's years, he set out on his travels for further improvement; and having reached Rome, the centre of the learning and arts of that age, he sojourned there for some time.

Having returned to his own country full of religious zeal, he fixed himself at Ardmore, and collected around him such as his teaching could induce to devote themselves to missionary labours. We have no reliable particulars of his after-life. It has been stated that he attended a synod held at Cashel in A.D. 499, where a dispute took place about the primacy, which after some discussion was conceded to St. Patrick, who confirmed Declan, Kieran, Ailbe, and Ibar, in the churches they had respectively founded. "That of Ardmore in the territory of the Desie in the County of Waterford was adjudged to St. Declan, by whom those people were converted."—(Mac Geoghegan; *Hist. Ir.*, p. 146.) If this statement be true—of which there is every probability,—South Munster had received Christianity long before St. Patrick's mission. His movements are strongly corroborative of this fact. His coming to Ireland as an apostle has been variously stated at A.D. 432 to A.D. 486. He appears to have been engaged seven years on his mission to Connaught, and seven to Ulster, after which he visited Leinster, before he came to Munster. This squares with the date given for his visit to Cashel, and the conversion of Aongus Mac Naidfrach, king of that province. It is quite evident from the above facts, that St. Patrick was quite satisfied with the missionary work that Declan and his venerable co-labourers were accomplishing in the south, else he would not have delayed his visit for so many years, and that our saint considered his time more profitably employed in those districts of our island which had not received Christianity, but were sunk in the superstitions of paganism.

The introduction of the faith into the south of Ireland is a curious and interesting subject. I should not wonder if future researches would confirm the supposition, that we received it from Western Britain. It is admitted now, both by Irish and Welsh antiquaries, that the Gaedhil had a lengthened occupation of South Wales, which lasted down to the sixth century, at whatever period it may have commenced. This fact is confirmed not only by the Gaedhelic topography of Wales, but also by the fact, that no less than nine Ogham inscribed monuments have been found there, in every respect similar to those found in the south of Ireland, and bearing names unmistakably Gaedhelic; and also, that the so-called Romano-British monuments, ascribed by antiquaries to the

fifth, sixth, and seventh centuries, present us in the majority of instances with names of a similar type. About the above periods, and long previous to them, a constant intercourse was maintained between the south-east districts of Ireland and the south-west parts of Wales; and, as Christianity had been established in the latter country at an early period, it is not at all improbable that many of the Irish settlers there may have embraced Christianity, some of whom, crossing over the narrow sea between Pembroke and Wexford and Waterford, may have brought the knowledge of the gospel into the native counties of Declan and Ibar before it had penetrated into any other part of our island.

That the labours of this venerable missionary of the primitive Church of Ireland made a powerful impression, not only upon the age in which he lived, but in succeeding years, even down to the present moment, is undeniable. By the peasantry of Cork and Waterford his memory is held in the highest veneration; and, while the festivals of other saints have in many places ceased to be observed, that of Declan is maintained as devoutly as at any former time, while numberless traditions concerning his life and labours are still current at the firesides of the farmers and peasantry of the surrounding districts.

I have considered it necessary to enter into these particulars in order to establish the antiquity of the Christian Church first founded at Ardmore, and to enhance the interest every lover of sacred antiquity must feel in examining its venerable remains. These remains form two groups; the principal one is situated on the side of the hill above the village, and consists of the Round Tower, the Leabha Deglain, and the Cathedral, all of which stand within the cemetery.

THE ROUND TOWER.

This is one of the most remarkable of its class; it stands at the south side of the Cathedral, at a distance of 22 yards; it is remarkable for the symmetry of its form and the excellence of its masonry. Until lately its conical cap was perfect; the top stone fell a few years since, and a portion of the cap is in an unsafe state. It is externally faced with ashlar work, in regular courses of from 8 in. to 12 in. high, carefully squared and neatly jointed. The excellent finish of the masonry is particularly observable at the northern face, where it is less weathered than at the south. It springs from a plinth of 4 in. projection, and rises to a height of 95 ft. 4 in., having one hundred and twelve courses of ashlar to the eave, not including the three string-courses; these consist of a boldly-projecting torus, dividing the tower into four rather unequal storeys; this feature occurs in no other Round Tower that I am acquainted with. The conical roof is formed of stones laid each course overlapping the preceding one; the batter in this example is very unusual, being half an inch to the foot.

The doorway is semicircular-headed, 2 ft. 8½ in. wide at sill, and 1 ft. 11 in. at springing of arch; height to soffit, 5 ft. 11 in.; the top of sill is 12 ft. 6 in. above base-course. The arch is regularly formed of ashlar blocks, and the arris is ornamented with a torus moulding, which is continued across the sill; it has a shallow rebate on the inside angle, close to which, on each side, are two projecting stone staples, formed on ashlar blocks built into the wall, one of which is much damaged. The masonrywork of this doorway is beautifully finished.

The window-opes are as follows:—One, quadrangular, in the second storey, 1 ft. wide at sill, 11 in. at head, and 1 ft. 5 in. high; one in the third storey, of the same form, 1 ft. 2½ in. at sill, 1 ft. 1 in. at head, and 2 ft. 1 in. high; one in the fourth storey, semicircular-headed, 7 in. wide at sill, 6 in. at springing of arch, and 1 ft. 2 in. high; internally this ope has the remains of a bead on both arrises for a height of 6 in. above the sill; it was never completed. The attic window-opes are four in number, and slightly

diverge from the cardinal points; that to the south is quadrangular. The other three are angular-headed; they are of similar dimensions, namely, 8 ft. 10 in. high, 1 ft. 5 in. wide at sills, and 1 ft. 2 in. at heads. Internally the tops of these windows were square, with corbelled angles.

In the first storey there are twenty-eight courses of ashlar; in the second, twenty-four; in the third, twenty-seven; and in the fourth, thirty-three. The material is a light brown freestone, stated to have been brought from Corran, one of the Slieve-Grian range of hills, a distance of about five miles from Ardmore. There is certainly no stone of its description in the immediate locality.

The internal diameter on a level with the top of door-sill is 9 ft. 1½ in.; the thickness of the walling, 3 ft. 5 in.; the entire diameter over the base course is 17 ft. The internal diameter, under the attic window-sills, is 4 ft. 7 in.; thickness of walling, 2 ft. 5 in. The internal masonry is of the same class and material as the exterior. At a height of 13 ft. 3 in. from the door-sills is an offset in the walling of 2 in., at 29 ft. higher is another of 1½ in., at 23 ft. higher is one of 4 in.; this last is 1 ft. 7 in. under the sills of attic windows. Here we have certainly no provision for floors, and such could never have been intended by the original builders; offsets of 2 in. and 1½ in. could never support such with any safety, while their great distances the one from the other would render communication by ladders almost impossible, as ladders of such a length could not be got inside the structure. If the old Celtic builders who erected this grand piece of masonry had intended floors, they would have constructed them of some imperishable material, as was their custom. They were used to stone-roofs and stone-floors, and knew well how to form them, and they did form them, in a few instances, in our Round Towers; thus at Castledermot we find one complete floor and a portion of another, arched in stone, with square holes for communication left in them; at Meelick, is one similar floor; these spring from ample offsets or boldly projecting string-courses; at Kinneith, there is one floor on a level with door-sill; it is composed of large thick flags, which tail into the original masonry. These are the only existing original examples of such contrivances.

At present there are six timber floors with ladders of communication, provided by the late Mr. Odell, of Mount Odell, the owner of the property. The joists of three of these rest partly on the narrow offsets above mentioned, and partly on holes made in the wall; the others on joist-holes broken at the time of their erection.

Sixteen stones project at various heights from the interior walling; five of these are carved into grotesque and monstrous heads, the others are rough stones such as masons frequently leave projecting from the face of walls, and which they afterwards dress off, but do not appear to have done so in this case. A writer in the *Gent's Mag.*, Sept., 1864, supposes that they were ornamental stones taken from some building which preceded the Tower, and were built into it; but this surmise falls to the ground when we remember that there are eleven of these stones unornamented. Did they build those in also? on the same grounds. Again, these carved stones, from their forms and character, could never have been used architecturally, and could never have been anything more than the projecting wall-stones of the Tower, fashioned into their present shape. Had the builders of the Tower such ornamental stones at hand, and did they use them at all, it would have been round the doorway or somewhere on the external face, where they could have been seen, and not in the interior, where they are out of all view.

These stones were probably fashioned in a freak of amusement by the workmen who were engaged in erecting the adjoining Romanesque Cathedral, in the latter end of the twelfth century, as a bit of practice by some of the "prentice masons" employed on the work, and who in all likelihood also

cut the bead round the arris of the doorway, and the bead on the internal window, which was never finished.

The attic storey is in a very unsafe state. At some period, probably when the Tower was used as a belfry, two rude holes were broken over the heads of two of the windows, evidently for fixing a beam to hang a bell from. They are not square-built recesses such as would be constructed as an original necessity in the building. In addition, all the piers between the windows have been cut away, hollowed out, in order to make room for the swing of the bell. This is palpable to the practical eye, and has unfortunately weakened the upper storey to such an extent as to cause the bulging out of two of the piers, under the superincumbent weight of the stone roof. The under part of this roof is constructed of a bee-hive, or pointed form, the stones not laid as an arch, but overlapping. The attic storey and roof-covering is in an extremely dangerous state, and may at any moment come to the ground. I have before stated that the materials of which this Tower was built were brought from the Mountain of Slieve-Grian, some four or five miles distant. The local legend is, that the stones were brought to the spot without "horse or wheel," and laid without the noise of a hammer, the meaning of which is, that the stones were all dressed in the quarry, and a line of men being stationed along from the quarry to the Tower, the stones were handed from one to the other. On visiting the Round Tower of Abernethy, in Scotland, I found a curious counterpart of this legend existing there respecting its erection. I was informed on the spot, that the stones of which it was built were brought from the Ochil Hills, some miles distant, and that they were conveyed to Abernethy in the same manner as in the Ardmore legend.

THE LEABHA OR ORATORY.

Of the Christian buildings at Ardmore, this is evidently the most ancient, and I think that there can scarcely be a doubt that it is of the age of Declan himself, if not actually erected by him. The antique type of the little structure, the extraordinary veneration in which it is held by the surrounding country, and its immediate association with the saint, being called his *Leabha* or *Bed*, that is, his grave, would lead us to infer as much. It stands due east of the Round Tower, and about 23 yards from the south-east corner of the chancel of Cathedral. It is of the class of oratories already described, stands due east and west, being 13 ft. 4 in. long and 8 ft. 9 in. broad, in clear of walls, which are 2 ft. 5 in. thick. It is built of hammer-dressed rubble masonry, the stones of large dimensions for so small a building, but numerous repairs and alterations have much injured its character; it has the projecting antæ or vertical buttresses so general in this class of structure. I doubt if ever it had a stone roof, from the scantling of the walls, which is much less than in our existing stone-roofed buildings. The original entrance was in the west gable, and is now built up; it was 5 ft. 6 in. high, 2 ft. 5 in. wide at sill, 2 ft. 1 in. at head; it was covered by a massive stone lintel 6 ft. in length, and the full thickness of gable. The east window is quadrangular, with converging jambs; it is 2 ft. 4 in. high, 14 in. wide at sill, and 11 in. at head, and is covered externally by a massive lintel-stone; internally, it is semicircular-headed, the head being cut out of one stone, the jambs being considerably splayed; the present entrance is a rude one, broken in the north wall, adjoining which is a small flat-headed window with inclined sides. In the S.E. corner of the Oratory is a large rude flag raised on rough masonry, under which the earth has been scooped out to a considerable depth; this is supposed to be the veritable *Leabha* or *Bed*.

This earth is supposed to be possessed of wonderful curative powers, a small portion being mixed with spring-water and taken inwardly. On the 24th of July, the Saint's

Festival, the *Leabha* is taken possession of by a female who has the dispensing of the precious earth, and who is careful to be paid for the small quantity she doles out to each. The original supply being long since exhausted, she takes good care to replenish the cavity with a fresh stock from any convenient locality. A similar flag in St. Colomb's Oratory at Kells is named St. Colomb's *Bed*.

A most interesting discovery was made in this building by Mr. Edward Fitzgerald, builder, of Youghal, who is an excellent antiquary, and has written many good articles respecting the archæology of this neighbourhood; I allude to the finding of an Ogham inscribed monument, which had been built into the east gable of the Oratory. An account of his discovery was communicated by that gentleman to the Kilkenny Archæological Society, and which will be found in their volume for 1854-5, p. 224. The stone is one of the most remarkable of its class hitherto discovered, as it bears three lines of inscription which have been fairly deciphered. It is of the pillar-stone class, and is 4 ft. 9 in. long; it has been removed from the face of the wall, and is now to be seen in the chancel of the Cathedral.

Here we have certainly evidence of the great antiquity of the Ogham character and monuments, when we find one of them used up as common building materials in the construction of one of the first, if not the first Christian edifices erected in Ireland. How old and how disregarded this sepulchral stele must have been, where the ancient Gaelic masons, with all their intense veneration for everything pertaining to the dead, could yet remove it from its original locality, and use it up as a building stone in the upper part of the gable of this structure, for the stone was placed 12 ft. from the ground, and the most of the inscriptions were covered up in the wall.

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood.—The late Lord Lytton's "The Parisians" is continued this month, revealing many new phases of French life, and showing, at the same time, the author's versatile powers. "Explorations" gives us the results of some excavations in the Holy Land. "The True Reformers" and "The Commencement of the Session" are the political papers: the former contains some touches of satire; the latter is an open onslaught on the Gladstone ministry, its measures and failures.

Macmillan contains some good papers. "South Sea Slavery" is the title of a paper by Mr. E. G. Blackmore. "The Recent Work at Chaucer," by Mr. Furnivall, is interesting, but we think there is some fancy as well as fact embodied. Mr. T. Hughes, M.P., contributes an excellent paper on "Problems of Civilization," somewhat democratic, but nevertheless readable and refreshing.

Temple Bar.—The opening story of Wilkie Collins, "The New Magdalen," proceeds effectively. A sketch of the late Lord Lytton is well written, and furnishes a good estimate of the life and works of that novelist. Among the other papers worthy of note are: a biographical notice of E. W. Montague and "Ten Minutes Too Late." On the whole the number is good.

Tinsley's Magazine.—The two leading serials of this magazine are still proceeding—"A Pair of Blue Eyes" and "London's Heart." The poetry is good, which cannot be said of the greater quantity of that stuff called poetry in several of our magazines. This month's issue, in all its papers, contains much to instruct and amuse.

Cornhill has also a number of readable papers and some good verses. Among the better contributions are—"Public Schools," "A Year's Botany," "The Agricultural Labourer," "Swimming and Walking." Of the historical class—"The Old Castles of France" and "Cameos from English History" will

repay perusal. The verses of Frederick Locker, "A Winter Fantasy," are well rendered.

The *Gentleman's Magazine* is, as usual, a good number. Blanchard Jerrold contributes a paper on "Gustave Doré at Work," and Mr. C. C. Clarke a critical article on "Shakespeare's Philosophers and Jesters." A new story is begun in this month's issue, entitled "Clytie." It would be rather soon to anticipate its success, though it gives a good promise in its opening chapters.

Belgravia for March is well worth its price. The editor's story, "Strangers and Pilgrims," proceeds apace in vigour and development. George Augustus Sala continues his amusing "Imaginary London." Graphic, wayward, satiric, sharp and sharper, George Augustus bounds along on his non-imaginary way, yet with strokes of his imaginary fancy. There is a paper on "College Scouts," a critique on Lord Lytton, and a rather odd paper on "Sacred Animals," giving some curious information not much known or hunted up.

Frazee opens with a national paper by Mr. Arthur Arnold on the "Transfer of Land." As this paper deals with a subject of some interest to a great bulk of our people, we will give a short extract. Mr. Arnold shows the practical benefits arising to the State from the adoption of the following propositions:—

"1. The devolution of real property in cases of intestacy in the same manner in which the law directs in regard to personal property. 2. The abolition of copyhold and customary tenures. 3. The establishment of a Landed Estates Court for the disposal of encumbered settled property. 4. A completion of the Ordnance survey of the United Kingdom upon a sufficient scale. 5. A system of registration of title which shall be compulsory upon the sale of property, the fees upon registration—sufficient at least to defray all official expenses—being a percentage on the purchase money; the same percentage for all sums. A certificate of title would be given free of all cost in respect of any freehold lands, of which the reputed owner could prove undisturbed possession for thirty years. Any title could be registered in the Land Registry Office upon evidence of title for thirty years; the fees being the same as in case of sale, when the registration would be compulsory. 6. That, preserving intact the power of owners of land to bequeath it undivided or in shares, no gift, or bequest, or settlement of life estate in land, nor any trust establishing such an estate, should hereafter be lawful; the exceptions being in the case of trusts for the widow or the infant children (until they attain majority) of the testator, or for the benefit of a posthumous child."

Mr. Proctor writes on "The Coming Transit of Venus." "The Irish Schoolmaster and the Irish Priest" is also a paper which will interest a number of Irish readers. "A Few Words on Philology" propounds a new scheme for pronouncing classical words. "Black Bartholomew" is an ironical paper in defence of that affair.

Colburn's New Monthly continues its Irish story, "Fairy Fenella," which is above the average of Irish stories appearing in English magazines. The writer, we think, has written in the same vein before. The other papers of merit are—"De Fauno Legendum," "The Garden and the Spring," "The Lost Bracelet," and "Random Ideas." The month's number is a varied and good one.

St. James's has three or four good papers. Among the interesting ones are—"The Adventures of Three Russians in South Africa," "Scraps from Recollection," "Modern Minor Prophets." The story, "Miss Dorothy's Charge," is continued.

London Society is generally a good number, and when it is dull in readable matter it is often sparkling in illustration. The serial, "A Simpleton," by Charles Reade, still proceeds. "Modern Music," by Georgiana C. Clark, and "The Secret Society," are good papers. "The Tomb of Virgil" is a short but excellent paper, and will be eagerly read by all readers. Florence Marryat's "No Intentions," a story, is continued. The other papers, some of which are well illustrated, will interest many.

St. Pauls contains a number of papers of average merit. Among these are—"Our Evening Party," "The Central Telegraph

Station," "Bread from Stones," "German Novelists." The stories sustain their interest, though not of a very exciting class.

The *Contemporary Review* has an opening paper, by Mr. Herbert Spencer, on "The Study of Sociology"; it is thoughtful. Mr. Goldwin Smith writes on "The Irish Question"—a very knotty question in sooth, and one which has puzzled the brains of hundreds of writers from the days of Elizabeth to the present. Mr. J. M. Ludlow contributes a useful paper on "Guilds and Friendly Societies;" and John Ruskin one, "The Nature and Authority of Miracles." "The First Arctic Expedition to the North-West" is also worth reading.

The *Fortnightly Review*, *Cassell's Magazine*, *The People's Magazine*, *The Argosy*, are all up to the average, and some of them contain articles by Irish writers and on Irish subjects.

GOBHAN SAOIR.*

(Inscribed to the Members of the Irish Antiquarian, Archaeological, Architectural, and other cognate societies.)

"The Irish Gobhan Saoir seems in some aspects, but not in all, the analogue of the Northern Wayland Smith. So far as the latter reflects the character of the Vulcan of the Pantheon, the likeness does not hold. No story of a love adventure resulting in lameness associates itself, to my knowledge, with Gobhan; nor is he specially a worker in metals. He appears as the great architect, builder, and joiner, whether the work be a dry-stone cairn, a bridge, a round tower, or a mediæval castle. It is only exceptionally, as in the Battle of Moytura, that we find him working in metals. The name itself—"The Master Workman"—seems to point to the origin of the myth. There are evidences of the existence, here as elsewhere in early times, of a peculiar building craft or guild, whose master, for the time being, would necessarily be a person of considerable note. Each work of importance would thus have its particular Gobhan Saoir, or master builder; and here we probably have the origin of the wide spread celebrity amongst the Irish peasantry of such a personage associated with the most distant works in time and locality.—(Notes on *Congal: a Poem*. By Samuel Ferguson.)

Old Craftsman-Architect of the Gael,
Great Master-Workman of Innisfail!
Monarchs may perish and thrones decay,
But the fame you won will live for aye!
On Abbey and Castle, Tower and Keep
Your versatile mind is engraven deep;
From Rathlin Island to grey Cape Clear
The relics are legion of Goban Saer.

The Pyramids raised in Egypt's land
Are marvellous works of brain and hand;
But who will restore the missing links?
Who can interpret the speechless Sphinx?
Nineveh fell in her pride and lust,
Pompeii lies neath lava and dust,
Carthage was stricken like Babylon,
And cities as proud fell one by one.

By many a pool and mountain peak
Lie ruin'd shrine of Roman and Greek,
Copied by Vandal and carping Goth,
Who won their laurels by robbing both.
And here in this Island men still learn
Part of their craft from Castle and Cairn,
Cairn and Rath; yet meet with a jeer
The name of their founder, Goban Saer.

Back, ere the nation was torn by feuds;
Back in the days of mystic Druids;
Back, ere the Brehons heard pleas or plaints;
Long ere this Isle was the Isle of Saints;
Ere Patrick preached or Ossian sung,
When all our sires spoke the mother tongue,
The Craft Masonic was practised here
By the Master-Workman, Goban Saer!

Deft worker in metal, wood, and stone—
Consummate artist in every one,—
Though dead, yet living, undying, still;
In Cell and Crypt, or on Cross-crowned Hill,
On Cromlech, Dolmen, or Druid's Chair,
Enthron'd in spirit, you're breathing there.
There's not a crannogue, or mound, or mere
But bears the name of Goban Saer.

* The name in the heading, though reckoned the more correct form, still it is more generally and popularly known and spelt in the modern dress as Goban Saer or Seer. For the purpose of our rhyme we use the second form. Myth or fact, as one personality or many, the name of Goban Saer is too closely for many centuries connected with the history of this island to be discarded now. The late George Petrie, as Mr. Brash observes, laboured to prove Goban to be a Christian, but we hold with the latter writer, in his "Notes on the Ancient Ecclesiastical Architecture of Ireland," that the name of Goban Saer is far older than the Christian era.—*Author's Note.*

Versed in all lines and sections occult
Of the Building Craft most difficult,
He framed and fashioned his choice designs,
And marked them all with his Ogham signs.
His workmen all were a mighty Guild,
With special laws to travel and build;
The guest of Kings, the theme of Bards,
Greeted by all with the first awards.

With daring genius that nought could block,
He drained the morass and cleft the rock;
Then, driving his oaken piling stout,
He built his piers on a bed of grout.
The bridge arose, the river was spanned,
And the water let back from the land.
Freshets on freshets have rolled in rain,
But the deep foundations still remain.

The broad-based, tapering, cone-topp'd tower,
The stone-roof'd palace of kingly power,
The entrenched dun of the warlike lord,
The banqueting hall and quaint-fram'd board,
The royal cradle and cenotaph,
Catafalque, urn, and epitaph,—
All these manifold works attest
The skill of the Architect of the West.

The hands that oft raised a monument
Could form a magical instrument.
In wood as stone in invention sharp,
He swept his curves as he swept his harp,
Shewing in workmanship realised
That Nature and Art were harmonised.
Oh, what have not our architects lost
By breaking laws they should follow most?

In knowledge he distanced all experts,
In precious ores and in painting earths.
Prompt were his mason guild to assay,
Or work at a mine, or land survey.
From crucibles filled with molten gold
He poured the metal into its mould.
On anvil, both axle and gear of wheel
And anchor he forg'd, with the warrior's steel.

The grit-stone quern for grinding corn,
The martial, drinking, and hunting horn,
Battle-chariot, triumphal ear,
And all the weapons of peace and war
By which a nation at honour's call
May rise, or, neglecting, headlong fall;—
Works like these, with a purpose clear,
Were wrought in this Isle by Goban Saer.

Live on, brave Architect of the Gael!
Live on, great Builder of Innisfail!
Live on in your rock-bound island home,
Indebted but little to Greece or Rome.
Unique old workman, who did engraft
Science and Art with your handicraft,
Lasting as are your Pillar Towers here,
Your fame will outlive them, Goban Saer!

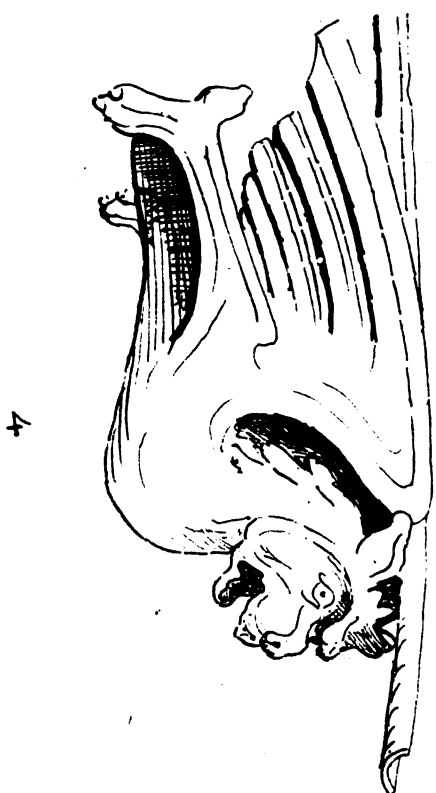
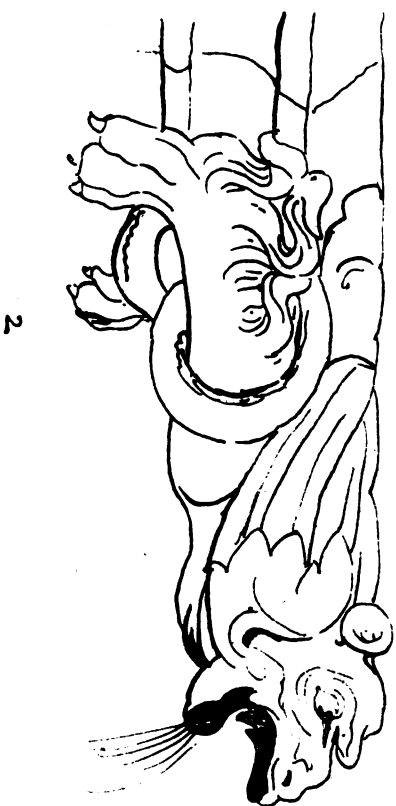
London, March 1st, 1873. C. H. C.

BOOKS RECEIVED.

Amalgamation of Unions, and Union Industrial Schools. By H. J. Gill, M.A., T.C.D. Dublin: Printed at the University Press. 1873. [For private circulation.]

THE scheme advocated in this little pamphlet is no new idea, but it is here clearly outlined. The scheme moreover is a feasible one, and could be carried out notwithstanding the difficulties that are in the way. With 163 poorhouses, erroneously called workhouses, the pauperism of this country would seem to be somewhat enormous. We are happy to say, however, that pauperism has been for the last decade or two on the decrease. In 1850 there were to the number of 805,762 receiving indoor relief, while in 1871 the number was reduced to 226,076—less than one-third. We have often said that our poorhouses should be only for the very young or aged, or those suffering from

† "Ogham signs."—These words are intended to denote "mason marks." The olden masons always marked their works with peculiar marks or letterings, and of course our early native guilds used their own language, emblems, and symbols for that purpose.—*Author's Note.*



GARGOYLES—YORK MINSTER.

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physical incapacity or other causes to earn their living. We also advocated that our workhouses should be self-supporting; there is no real difficulty in the way of making them so, and embodying in their management the industrial school principle for the instruction of the youth of each sex in the learning of trades connected with the industrial arts. Our poorhouses are a series of gigantic barracks for the housing, dwelling, and perpetuation of a race of paupers, instead of being normal schools of industry. Any scheme having for its object their reform, by which the taxation of this country can be reduced, and the education and prosperity of the country improved, should meet with cordial support. The author of the present pamphlet thus proposes to effect his scheme for the Amalgamation of Union and Industrial Schools:—

"The first portion of my scheme is, that the Unions should be divided into groups of a certain number in each. This is a question that could be settled, as far as this number is concerned, afterwards; but for the present I would suggest groups of four, or perhaps eight would be preferable, for a reason hereafter to be mentioned. The same amount of Poor Rates should then be levied over the entire district comprising each of these groups. This would enable the guardians of such district to act as they thought proper with regard to any Workhouse, in conformity with my plan, without any necessity of quarrelling or disagreeing about different rates in the several Unions. This being done, three out of each group of four, or six out of each group of eight Workhouses, should be selected to be reserved for their present purposes, with perhaps some improvement in the system of their management. There would thus be left vacant one Workhouse in every four throughout the entire of Ireland, and the second and important portion of my plan is to change these into Union Industrial Schools. There are, as I have said, one hundred and sixty-three Workhouses in Ireland. Excluding those of the North and South Dublin Unions, and the Belfast Union, which I think should not be interfered with, we would have at our disposal forty fine roomy buildings, as suitable as if they were constructed specially for the above-mentioned purpose, and with scarcely any expense to the country. I think that if the same number of such buildings had to be erected at present, taking into consideration the great advance in the prices of materials and labour, they would cost considerably more than a quarter of a million pounds sterling—perhaps nearer to half a million.

"In each group of four or eight Unions, the building or buildings most suitable for the purpose could be changed into the Industrial Schools, the others retained, as hitherto, for the purposes of ordinary Workhouses."

The author thinks, by the carrying out of his scheme, that children sufficiently grown and strong could, under proper supervision, be employed during haymaking and harvest times, and their earnings be paid into the schools. He also anticipates that through the establishment of companies for the manufacture of prepared peat, that many of the children in industrial schools near to boggy districts could assist in juvenile labour during the summer months. The object for which industrial schools are formed is to teach a trade or occupation, and, this should be closely adhered to. There might be some of the industrial schools carried on with the object, of course, of turning out a better class of youths for agricultural and farming pursuits; and there is need in Ireland for an improved education in an agricultural direction. There was no necessity, we think, for printing this brochure for private circulation and eliciting public opinion at the same time. The views put forward are, in our opinion, sound, and the scheme is worthy of attention.

SCIENCE LECTURES FOR THE PEOPLE.

A SERIES of popular lectures has just been concluded in London, which we would like to see imitated in Dublin. A similar series, supplemental to those in the Dublin Society on Sanitary Science, would be very desirable. The London course of lectures commenced

on the 21st day of January last, and the three last of the course of eight was delivered by Mr. Norman Lockyer, on Spectrum Analysis. The course was illustrated by diagrams and photographs, shewn by means of the oxyhydrogen lantern and by experiments by electric light. Among the other lectures were ones by Dr. W. B. Carpenter, "The Physical Geography of the Deep Sea," and "The Animal Life of the Earth," "The Geological History of the Earth," and "The Coal Formation," formed the subject of lectures given by the Rev. W. S. Symond. There was also an additional lecture by Dr. Carpenter on "Limestone and Chalk." Upwards of 2,000 persons attended at each lecture, the majority being of the working classes.

BELFAST ARCHITECTURAL ASSOCIATION.

A MEETING of this society was held on Monday evening, 3rd inst., in the museum—Mr. John O'Neill, F.R.I.A.I., in the chair. A paper was read by Mr. Samuel P. Close, A.R.I.A.I., descriptive of an excursion to Northamptonshire last autumn in company with the members of the London Architectural Association. Mr. Close referred to the many places of interest visited by the excursionists. The paper was illustrated by a large number of drawings and sketches showing some portions of almost every place visited.

CORRESPONDENCE.

DAMP IN A SEASIDE HOUSE.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have lately become the lessee and occupier of a house overlooking a bay on the north-western coast—a ten-roomed, two-storey, square structure, substantial and well built, now about twenty years erected. It stands on a dry sandy soil on the slope (not summit) of an eminence, and fronting the south, and about forty perches from the shore. Pipes brought through the slight elevation at the rear carry off the house-drainage, surface-water, &c., giving it a fall at a considerable distance. In short, it is a house one would expect to be very dry, and yet a general dampness pervades it. It was newly painted and papered last summer, great care been taken in scraping, washing, and preparing the walls; yet, already, on all the outer ones the paper is quite disfigured by blotches of green mould, which also gathers on almost everything in the house not in constant use or under the immediate influence of the sun or fire.

Is such dampness caused altogether by its nearness to the sea? or can it be remedied? I have consulted several local authorities in the building line, who seem to be quite at fault about it. A notice in your next issue would greatly oblige.—Yours &c., M. M.

11th March, 1873.

P.S.—Perhaps I should add that the damp is evidently not from the foundation, the lower part of the walls being the driest.

[Perhaps some of our readers would favour us with their views in the matter.—ED. I. B.]

BUILDERS AND ARCHITECTS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I think some of the members of the Irish Architectural Association could furnish a useful paper to their body and to the public, on builders' designs. Here is a most suggestive field for one having a taste for the subject and a desire to do his profession some useful service. "Builders' designs" are marvellous pieces of draughtsmanship and colouring, and how they are got up is somewhat of a mystery. The first draught of many of them is drawn on a nice clean piece of pine, nicely smoothed and glass-papered by the young apprentice. The smoothing plane goes over a number of the lines before the proper idea is arrived at. When that ordeal is passed, the transferring to paper takes place. In the realms of shop-front architecture, builders' designs are shown to the greatest advantage. The artist revels in detail and colour here: pedestals, panels, pilasters, consoles, entablatures, plate-glass, the name of the intending shop-keeper

on the fascia board, and the goods intended to be displayed in the shop-window are shewn in the design by anticipation. The colouring is so gorgeous, glittering, and exquisite, that the shop-keeper is enthralled. To add to his ecstasy he is informed that if he gives the work to the firm from which the gorgeous design has emanated, nothing will be charged for the plans. As Monsier says, "all will go in de bill." Will some of our architects tell us approximately how many houses are built in this city yearly from builders' designs? In justice to some of our builders, I must say that their designs are often superior to many of our *soi disant* architects. But to the question—Is it any wonder we have so few architects able to keep their heads above the water in this city. To make matters worse, some of those few who have a tolerable practice send over to London to get sketches filled in and prepared. The condition of architectural practice, Sir, in our midst between two fires is something like what the poet has described in the following lines. The word Art must, however, in our case stand for architectural practice instead of being applied to the name of a person:—

"Rise Art, rise, the last penny is spent;
Art, here's the sheriff, the rent, the rent."

Leaving it to your readers to draw conclusions, I subscribe myself, yours, &c.,

SEMPER FIDELIS.

SANITARY INSPECTION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—In common with several of my fellow-citizens, I have read with humiliation and regret the answer of the Public Health Committee of the Corporation to the Sanitary Association. Surely the Association asked no unreasonable request. Although I do not entirely agree with the recommendation of the Association in the matter of utilizing the present dispensary medical staff, yet on the whole their suggestions are proper in principle. I object to the employment of the police in the manner in which they are employed by our corporation. The duty of sanitary inspection should devolve altogether upon, and be confined to, a regular sanitary staff. Volunteer aid, of course, is of value when performed by those who have time and capacity to devote to such a philanthropic service. The Corporation of Dublin will have reason to regret their decision. The bad condition of Dublin is now a theme for comment not only throughout this country but across the channel. Instead of devoting their energies to the crying wants of this city, our local rulers are more intent on occupying their time with political and religious discussion which ought never to be introduced into a municipal body. What business have the Corporation with the University Bill? If any of their robed members desire to discuss such a subject, there is ample room for its discussion elsewhere. Nothing but matters connected with the improvement and commercial welfare of the city should be taken up in our local body, and the sooner a Municipal Amendment Act is passed prohibiting the discussion of all political and sectarian questions in corporate bodies, the better will it be for the rate-payers of towns and cities. There is quite enough of factious politics in this country without making Dublin and other Irish Municipal bodies chronic arenas of political strife.—I am, Sir,

A CITIZEN.

THE TRAMWAY SCAVENGE SYSTEM.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Can you inform your readers what has been done in this matter? Upwards of three months since Mr. Norwood informed the public that the Corporation were perfecting arrangements, whereby the tramway system could be utilized to carry out an expeditious and efficient scavenging-disposal service. There is not the least doubt but the tramway lines can be used for the conveyance of the dirt, rubbish, and other refuse of the city, to distant "shoots" in places of deposit in the suburbs. The tram-lines are being used in England for this service, and why not in Ireland? Waggon or lorries can be readily constructed to run on the lines with sidings at convenient places, and the scavenging service could be confined to early morning or immediately after the night traffic ceased. What can be carried out elsewhere a few weeks after its proposal appears to require years to perfect in this unfortunate city. The public health requires that a prompt service in the scavenging department should be at once adopted. It is to be hoped that this last useful, urgent, and feasible project will not die the death of the Convalescent Home proposal.—Yours, &c.,

CIVIL ENGINEER.

"THE QUERIST."

BY GEORGE BERKELEY, BISHOP OF CLOYNE.

(With Notes by "Dubliniensis.")

"FIRST PUBLISHED A.D. MDCCXXXIV."

WHETHER, therefore, it would not be highly expedient, if our money were coined of peculiar values, best fitted to the circumstances and uses of our own country; and whether any other people could take umbrage at our consulting our own convenience in an affair entirely domestic, and that lies within ourselves?

Whether every man doth not know and hath not long known that the want of a mint causeth other wants in this kingdom? [The existence of a mint in London, and the system of coinage adopted, is productive of both hardship and loss to the poor, who do not really get full value in the coinage for what is represented or should be represented by it. The particulars, however, of these evils would be too lengthy to enter upon here.]

What harm did England sustain about three centuries [upwards of four centuries now] ago, when silver was coined in this kingdom?

What harm was it to Spain that her provinces of Naples and Sicily had all along mints of their own?

Whether it may not be presumed that our not having a privilege which every other kingdom in the world enjoys be not owing to our own want of diligence and unanimity in soliciting for it?

Whether it be not the interest of England that we should cultivate a domestic commerce among ourselves? And whether it could give them any possible jealousy if our small sum of cash was contributed to go a little further, if there was a little more life in our markets, a little more selling and buying in our shops, a little better provision for the backs and bellies of so many forlorn wretches throughout the towns and villages of this island? [It would indeed have been the interest of England had she assisted us in Berkeley's time to cultivate a domestic commerce, instead of putting restraints upon it. Jealousy destroyed what would have been a profit and an advantage to the sister kingdom; and what we were debarred from prosecuting, foreign nations took up and eventually rivalled, and drove England out of her own market.]

Whether Great Britain ought not to promote the prosperity of her colonies by all methods consistent with her own? And whether the colonies themselves ought to wish or aim at it by others?

Whether the remotest parts of the metropolis, and the lowest of the people are not to be regarded as the extremities and capillaries of the political body?

Whether, although the capillary vessels are small, yet obstructions in them do not produce great chronic defects? [In neglecting to afford a communication with the distant parts of this island for many years, this island has grievously suffered. Local industries were crippled, and those who had marketable products were deterred from sending them to a remunerative market, through the cost of their transmission. The building resources of Ireland which exist in Connemara, Donegal, and Kerry, in consequence remained and still remain undeveloped through want of a cheap and thorough railway communication.]

Whether faculties are not enlarged and improved by exercise? [Both mental and physical faculties are enlarged and developed by use; and so, by trade, manufacture and commerce, foreign and domestic.]

Whether the sum of our faculties puts into action, or, in other words, the united action of a whole people doth not constitute the momentum of a state? [Of a verity.]

Whether such momentum be not the real stock or wealth of a state; and whether its credit be not proportionable thereto?

Whether in every wise state the faculties of the mind are not the most considered? [They are, but not always in a practical

direction. That which ministers to mere luxury and enjoyment receives by far too much attention, to the neglect of that which aims at the public good and the national prosperity.]

Whether the momentum of a state doth not imply the whole exertion of its faculties, intellectual and corporeal; and whether the latter without the former could act in concert?

Whether the divided force of men acting singly would not be a rope of sand?

Whether the particular motion of the members of a state, in opposite directions, will not destroy each other and lessen the momentum of the whole, but whether they must not conspire to produce a great effect? [We have an illustration of this unity and opposition very often both in our local and national councils. Unity, however, unfortunately is not the normal condition of public proceedings; a little wholesome opposition is betimes desirable and essential to crush faction and conspiracy against the public weal, and prevent individual aggrandizement at the expense of the common good.]

Whether the ready means to put spirit into this state, to fortify and encrease its momentum would not be a national bank and plenty of small cash?

Whether that which employs and exerts the force of a community, deserves not to be well considered and well understood?

Whether the immediate mover, the blood and spirit, be not money, paper, or metal; and whether the soul or will of the community, which is the prime mover that governs and directs the whole, be not the legislature? [The legislature ought to be the prime mover, if the prime object of all good government was understood and followed; but, as it is, it is the public opinion outside the legislature that is more often the prime mover.]

Supposing the inhabitants of a country quite sunk in sloth or even fast asleep; whether upon the gradual awakening and exertions, first of the sensitive and locomotive faculties, next of the reason and reflection, then of justice and piety, the momentum of such country or state would not in proportion thereunto become still more and more considerable? [Undoubtedly.]

Whether that which in the growth is last attained and is the finishing perfection of a people be not the first thing lost in their declension? [In the decline of a nation generally the morality of its people is thrown outside. In an individual the mind is the last to arrive at maturity, and it will be found to generally fail before any other of the powers. Locomotion ceases even before the appetite; but, as this last faculty fails, it may be written in the language of Shakespeare, *sans teeth, sans eyes, sans taste, sans everything.*]

Whether force be not of consequence as it is exerted; and whether greater force without great wisdom may not be a nuisance? [According to circumstances it may either be a nuisance, a calamity, or lost labour.]

Whether the force of a child applied with art may not produce greater effects than that of a giant? And whether a small stock in the hands of a wise state may not go further and produce more considerable effects than immense sums in the hands of a foolish one? [Our modern mechanical inventions have proven what a small force can put in motion; but the wisdom of states, i.e., the collective wisdom of a number of legislators have not kept pace with the inventive capacity of the age. Small sums of money or a small stock-in-trade is now despised. It is with states very often as it is with merchants or shopkeepers—they must grow gigantic for the sake of appearances, and by growing gigantic they grow unwieldy, exhaust their resources, and hasten their ruin. Standing armies, like large warehouses and too many assistants, are evils. The former, though they may protect the nation, add but little to its productive prosperity, and a surplus number of assistants and goods entails a heavy loss very often instead of a profitable income.]

Whose fault is it if poor Ireland still continues poor? [The fault of her own people mostly, though her rulers are not free of blame.]

THE END.

Thus concludes our republication of Bishop Berkeley's "Querist" entire without the least abridgment. Some of the queries we reproduced have lost their interest in course of time, but the majority of them are still pertinent and opportune. They are eminently practical and suggestive, and, as we have already said, are as applicable to the present hour as they were one hundred and thirty-five years ago. We hope that the re-issue of them in the form in which we have given them in this journal has been productive of some modicum of good. Several of the good bishop's queries have passed into maxims, mottoes, and texts, in one shape or another at home and abroad; and the lessons which the "Querist" conveys, if acted upon and applied, would make this country prosperous and happy.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

CROSS-BONES STREET.

THE history of the "Vicus Cocorum" has partly been written already, at least up to the close of the eighteenth century. We remember traversing this narrow defile in boy's jacket and with a light heart ere the commencement of the railway era; but, even at that period, melancholy had marked it for its own, despite that a few of the "Grub"-street fraternity of flickering rush-lights of penny-halfpenny literature still were burning low in their sockets. As we walked out on our re-visit a few mornings since, we felt a chill creeping over our person. There was a smell of the cold sodden earth, paint, burnt glue, stale size, and odorous elm sawdust. There was a rat-tat-tat on every open shop-floor, and tin breast-plates, black tacks, and sable cloth were plentiful. Bloated cherubs, vicious-looking angels, and weeping entities, who never dropped a tear or felt a pang of grief, made up the garish stock of trade allurements; and, notwithstanding the sepulchral accompaniments, the living artists and workers in these hammered away tat-tat-tat, and chatted with the hilarity which workmen always show when there is "a roaring trade" doing. And why not bless our paternal Corporation, to whom all thanks are due? What would the denizens of historic and never-to-be-lamented Cross-Bones street do, if dirt was dear, and adulterated food and drinks received undue supervision? Why, the only good staple trade our poor city has left, the glorious remnant of the industry that flourished so gloriously in '32 and '49 might be extinguished nearly altogether if the "wise and prudent men" of our Local Parliament were not partial and considerate to contractors whose trade is a necessary evil and a national institution. Long live Cross-Bones street. Had not our last-day workmen a good trade, what would the freestone and marble merchants do? What would become of the makers of tacks, the artists in tin, and the dyers of "fimsy"? Our timber-merchants are concerned not a little also; but one and all might shut up, in a manner, if the Corporation published an edict against dirt, and offered prizes for clean dwellings, robust constitutions, and rosy children.

"Always before me," quoth the "Oldest Inhabitant." "I hope I have not kept you long a-waiting. Strange, indeed, sir, are the transformations which Cross-Bones street has undergone, even since I was a young lad. This locality was once famous for friars, innkeepers, exiles, refugees, printers, publishers, and merchants in variety since the days of poor Lord down to those of Jack Oldgent, the prince of the ballad printers. My father,

sir, remembered a good many strange characters connected with this street and its approaches right and left. He told me a laughable incident one time about Tony King the tinker, Lord Mayor in 1778. Tony was one of the strangest characters of his day, having a good deal of eccentricity in his composition, yet withal possessing considerable courage. Tony was knighted for his courage in chasing and capturing a runaway criminal who had escaped out of gaol. The brazier followed the fugitive up hill and down alley, and finally captured his quarry in the darksome windings of the Poddle, where he had run him down. For this gallant exploit the tinker was dubbed 'Sir Anthony.'

"I don't know much about poor Father Austin, of Rosemary-lane Chapel, who died at a very old age, and lies interred in St. Kevin's Churchyard; but I recollect Father Betagh, who died in 1811. Father Tom Betagh was descended from the Betaghs (or, in Irish, the Biadhtachs) of Moynalty, in Meath. His ancestors held large possessions, but were despoiled of their property by Cromwell. Father Tom was born in 1738, in the town of Kells, and, after receiving a grammar-school education, was sent to France, where, in the seminary of Pont-a-Mousson, in Lorraine, he went through his several studies. He returned to this city in 1773, and, in conjunction with Father Austin, opened a school in Sall's-court, Fishamble-street. The seminary was afterwards conducted in this street.

"Rosemary-lane Chapel was a noted place of devotion once. At the corner of Archy's-court the famous 'Couple Beggar' clergyman lived, who locked up more criminals in Hymen's cell with an old door-key than any other turnkey in his Majesty's dominions. The key of his reverence's door, or any other key, if the parties were too poor to buy a ring, would suffice to complete the compact of the Irish Gretna-green marriage. Father Magauley, though an excommunicated cleric, continued to scarf couples together for many years, made money, and was celebrated by the Liberty poets and the Cross-Bones street ballad singers.

"I don't remember the cage-work houses of this street, but my father told me of them. They were all of timber, and I heard him saying that the work of many of them was prepared in Holland in the seventeenth century, sent over to this city, and put up by Dublin carpenters. When I was a young man Jack Oldgent printed ladies' and gentlemen's book and sheet almanacs, and had a back parlour where the Poet's Club used to meet twice a week. None but those who catered for the public taste in sheet and book almanacs and such-like literature were allowed to push their noses inside the sacred sanctum of the back parlour in Cross-Bones street. This rendezvous was well known to the immortal Zozimus, Blind Sadler, Ranting Sal, Limping Kitty, Leather-lunged Larry, and Warbling Biddy. These singers, according to whatever subject was in preparation suitable to their vocal powers, were called in for a consultation with the poets and their publisher. If a criminal was under sentence of death, to swing at Kilmainham or Newgate, there was, of course, an absolute necessity for a 'lamencholly' effusion. 'The last dying declaration' was to be properly wetted down and moulded into shape, and a most tender 'Come, all ye Christian hearts.' If the member for Ballyragget or Ballyjamesduff successfully bearded the Saxon minister in the House of Parliament, this was the signal for a heroic effusion with a thrilling chorus. 'Paddy's evermore' was revived with variations, or the antique 'Lillibullero, bullena a la.'

* Now the old prophecy comes for to pass,
Stanley's the dog and the Viceroy's the ass.
* Lillibullero, &c.

It was only in times when the blood of the people was up to fever heat, that the courageous bard would tread so hard upon the corns of authority as exemplified in the lines I have repeated to you. A rare company, indeed, sir, were the bards and ballad-singers of Cross-Bones-street. There was an annual

dinner, held at Jack Oldgent's, called the 'Bards' and Ballad-singers' Ball.' This, sir, was a crack assembly, presided over by Jack himself as president and the best ballad-singer, for the time being as vice-president. Zozimus occasionally acted as Master of the Ceremonies, or Toast-master. In this capacity he generally gave his literary friends the benefit of his historical and legal knowledge. Of the latter he prided himself, for when taken up up betimes for too much freedom of speech in the streets, and for giving expression to words that were not to be found in the 'copy,' he pleaded privilege and 'Magna Charta,' and generally got off, the indulgent magistrate being himself a literary character. A true account (if placed in print) of the Bards' and Ballad-singers' Ball would be one of the richest things on record. The north and south city sent in their 'representatives.' Every ballad-singer represented 'a walk.' Those of Thomas-street, Francis-street, or Redmond's-hill dare not make tracks to Britain-street, Moore-street, or North King-street. The singers and dying-declaration men who were able to furnish a rough copy of an original composition of merit, were allowed their copies so much per cent. cheaper, and, of course, had the honour to be called in for consultation when a Whiteboy was captured or a landlord shot. Whoever could 'pile on the agony' best, or rouse the enthusiasm of the council, was a welcome member at all times to Jack's back parlour in Cross-Bones street. Excitement was very low in one year when I was a young man. So, having some little sympathy with the fraternity, I dashed off a song, and gave the copy to a noted street-singer, telling him to get it printed where he liked. The second day after I was waited upon by a mixed deputation of ballad-singers, representing north and south Dublin interests. It appeared that a rival printer on the Coombe had pirated a copy of the ballad which Jack Oldgent had secured; so the ballad-singers, in a state of perspiration, waited upon me to decide the matter of copyright. I told them that I had surrendered all claim to copyright myself, and as I wrote the ballad for the interest of their order generally, they must settle the difficulty amongst themselves.

"Although thanking me for my sympathy, they went away from my house not altogether well pleased with the result. In personal appearance, Jack Oldgent was not a bad-looking fellow, of middle height, civil in manner, and rather timid about the law of libel.

"Like Dean Swift's printer, Jack had a timber toe, and hardly needed a staircase in his house, except by way of ornament. When he trod upon a man's corns with his ashen foot, the man was sure to feel it, and Jack excused the bluntness of his rigid understanding.

"The successor of Whally's, Compstey's, Knapp's, Moran's, and old Moore's

* New and true Almanack,
Book and Sheet Almanack,
Correct Tide and Weather-table Almanack,
Almanacks for the New Year,

is departed beyond that bourne from which neither travellers nor almanack-makers ever return to see the fulfilment of their prophecies.

"Ruin, sir, black and ghastly, has rained down out and about this quarter. It is almost impossible to commune with the spirits of the mighty dead in this once historic quarter. The happy hunting-grounds of the antiquarian and archaeologist are swamped with thickly matted ghosts of buried generations. Life and death here, sir, is in a spasmodic and deadly struggle. No man thinks of building here, but pulling down and nailing down. A body cupboard-maker once in this quarter rose to fame by building for the living instead of the dead. His great work still stands by the sluggish waters of the Liffey, a melancholy monument of his wayward genius. In an evil hour he became a builder, and erected "Confabulation Hall." Careful of the principles of his original profession he secured for the lower storey unlimited dampness and defective drainage. While the tribune of the people

spoke upstairs about righting wrongs in battle line, the water-rats held gay carnival in the basement below. Satisfied with his job and the profit it brought him, the Cross-Bones street cupboard-maker next built a new square, but before it was well completed the houses were demolished in character by the development of a social evil—doom—doom—doom overtook all Mr. Mementi Mori laid his hands upon."

Having traversed the historic street from top to bottom, and some of the adjacent courts, the "Oldest Inhabitant" accompanied me to the hall of the Four Courts, where we parted, with a reminder for our next visit in another quarter of "Unknown Dublin."

COLORED DECORATION.*

(Concluded from page 71.)

IN fresco painting the artist has had considerable difficulties, principally chemical; and the history of this art in England and Germany has been somewhat disheartening. The first paintings at the Houses of Parliament, like those at Munich by Cornelius, began to suffer almost as soon as completed; and the panels filled by the late Mr. Dyce at Mr. Butterfield's Church in Margaret-street, London, have been already renewed. The great difficulty has been to so chemically combine the silicates of potash or soda with the lime and sand of the mortar and the pigments employed as to defy the influences of a climate like ours: indeed I would be more correct in saying certain changes which occur in every climate, although with greater force in ours. The recent pictures by MacIise at Westminster and by Baron Kaulback, at the Museum at Berlin, styled the "water-glass process" or "stereochromy," approach nearer to success, although we are not yet in a position to state this with certainty. You are of course aware that the principal object of fresco painting has been to enable a finely-executed picture from the artist's own hand to take its place in an architectural decoration, and be viewed from every point without glitter. The pictures at Berlin are grand conceptions (the series, when I saw them, was not complete); they did not shew any signs of change to the casual observer. Those at Westminster we know shew signs of decay, although not so much as the earlier works. The recent ones by Cornelius and his pupils at Munich have also approached perfect freedom from change; but, as I have said, this—like the kindred subject of the induration and preservation of stone—requires a longer time to enable a report with confidence to be made on the results. Should the more recent processes be a success, painting in distemper can also be added to the list of durable decorations. Fresco painting in its simplest form was merely executed with water colors on wet plaster; this was succeeded by syringing with water-glass, and finally the application of the soluble silicates was extended to the mixing and the medium of the colors themselves.

Stained or painted glass is, of course, confined to the windows of a building, and will have again to be referred to. I would merely allude to some of the controversies it has generated. Like mosaic, it owes much of its beauty to the gem-like effect produced by the play of light (in this case in transmission). I need not remind you that inferior glass in the technical sense is so superior to that which is perfectly transparent, that the "pot metal," as it has been called, with its splendid colors and unequal and mixed powers of transmission, is the true source towards which we are to look for color effects. The questions raised are principally—1st. Grotesqueness in treatment of the human figure. 2nd. The management of the necessary leading. 3rd. Are pictures, properly so called, allowable—i.e., finished transparencies. The Munich glass generally, and such windows as those at Glasgow Cathedral particularly, would exemplify this last question. I cannot

* By Mr. C. H. Brien, A.R.I.A.I. Read at meeting of Architectural Association of Ireland, February 27th, 1873.

help thinking that crowded and involved figure subjects are a mistake; that stained glass, as I have already said, is allied to mosaic, and, if you are to regard it as to group with frescoes, the finer treatment is allowable. In any case it is unpardonable to appear in the treatment of the human figure to ignore the fact of the great advances we have made. In the management of the leads glass should be treated as a mosaic where figures are absent, and where they are present we should not go out of our way to intrude the leading on the view. Instead of confused figure subjects, where the arrangement of colors seems designed so as to aid that confusion, the most beautiful effects can be obtained by color alone—I mean pure color,—judiciously separated by complimentary greys and the necessary leading; and if the figure is to be used, I am bold enough to urge that it shall not take on it a non-natural form or coloring, even although the work be then open to the odious charge of being a transparency. In domestic buildings there is less reason for perpetuating traditions of the kind to which I have referred, and improvements in the manufacture of stained and colored glass are paving the way for reforms.

I have lingered rather long on these questions. We have three great types of church decoration—those adorned with mosaics and marble, or with frescoes and clear windows; those with stained glass and little other colored decoration; and those, like the Sainte Chapelle, where the whole interior is one blaze of color. You will at once perceive that such a building as St. Peter's at Rome is best seen without the interferences caused by colored light. In the Sainte Chapelle, however, distinctness is sacrificed to the general effect. In buildings where stained windows are the only colored decoration, it is a question whether the key in color is not generally too high—I mean the total amount of positive color. I have already urged that the proportion of positive color to the colored greys should be less. In the case of the great Roman Catholic churches abroad, where pictures of great value and age are to be found, it is essential that they should not suffer by contrast with the decorations of wall or window.

As respects the decoration of picture galleries, three or four types occur to me where the treatment as respects color somewhat differs, and which illustrate what I have to say—the Louvre at Paris, the museums at Dresden and Berlin, and our new galleries at Burlington House (I have never seen the Italian galleries). The last I think is in many important respects the best. In a picture gallery, whether for the old masters or for recent works, it must be remembered the gallery is mainly meant to exhibit the works contained with the least possible interference with their peculiar merits. I know it will be urged that in a permanent gallery—one where the same pictures are meant to hold always the same positions—the decorations of the gallery should be toned up to the key of the pictures; this evidently has been the theory at the Louvre, and still I think the pictorial decoration of the ceilings a mistake—indeed I look upon most of the recent work at Paris of this kind and all figure subjects on ceilings as a mistake; the brilliant colors take from the pictures below, and even when years have passed, they will fail to harmonize. At Dresden, if I remember rightly, the entrances to the galleries are tinted a grey, in which blue dominates in the decorations, representing subjects as if in relief, and seem shaded most admirably to suit the light to which they are exposed, and with peculiar German skill the moldings and other architectural members are so simulated as, even when examined with an opera-glass, to appear in relief;—indeed I could not decide whether or not some of the paterae were painted or really molded. At Berlin you pass up a staircase lined with the splendid frescoes I have already referred to, but the gallery divisions are badly lighted. In our new gallery in London (as you are, no doubt, aware)—simple colors, gilding, and

marbles of red, black, and grey do not interfere with the pictures. The maroon so much used on galleries of old paintings has not only an harmonious effect as to tone, but by contrast will brighten the dulled greens, as the sage greens on water-color rooms heighten the bright colors of the drawings exhibited. As respects objects of sculpture, a pearl grey on the walls will increase their whiteness (if that be desired, a green grey give them a rosy tinge), a blue an ivory tone (really a faint orange). In the case of bronzes, by the same law of contrast, the red bronzes will be improved by green-tinted walls looking redder, and the green by a reddish tint looking greener.

In the case of the annual exhibitions of modern paintings, where freshness and brilliancy of color must abound, it is a pity that the artists themselves, in seeking foremost places, so often forget that by not aiding in the classification of their works, they often mutually damage each other: paintings appearing side by side which would be the better of considerable separation. As respects museums of natural history, &c., it is apparent that, like conservatories, they cannot be tinted with too much care, to prevent interference with the color of natural objects, and for purposes of study. Whites or greys can be the only correct back-grounds. I would not always say whites only, because I think the very violence of the contrast prevents distinct and satisfied vision. Indeed, in the case of conservatories both green and brilliant white should be avoided internally.

In the case of theatres, concert halls, and other buildings, where numbers assemble in brilliant dress, the two very different schemes of decoration I have referred to have been adopted—that of brilliant color, and that of a quiet but rich foil, especially to the audience in the boxes I think the latter the more successful. Care is especially required in the fronts of the boxes, their linings and hangings. Nothing is better than lace hangings, as the grey foil to color is obtained in its most pleasing form. The fronts of the box or balcony should not spoil the brilliant and varied array of color above, nor should the background intrude itself and prevent distinct vision. All who visit our places of amusement must mark the vast change which has come over their decoration. Of course the garish still lingers in lower places; but in those of the better class much chaste and thoughtful coloring may be found.

The decoration of domestic buildings generally, whether of the superior or inferior class, really rests on similar principles, and can be conveniently considered together. The natural laws which govern what is called good taste do not lend themselves to wealth alone. In cheaper materials the same satisfactory results are possible.

It is, perhaps, in the decoration of these buildings that the laws I have been explaining have most weight, and at the same time present the greatest difficulties in their application. We cannot conceal from ourselves the fact, that the variety of objects and the differences in material involved, render well-nigh impossible that satisfactory balance which to the educated eye can alone bring content. I think these difficulties, for the most part, lie rather in the direction of tone than in positive differences of color. In ordinary dwellings these discords can only be removed by proceeding on a settled plan in dealing with color, very much as the refined seek to deal with similar difficulties in their personal adornment. In the decoration of public buildings the large areas involved make interferences so little felt, that the influence of colored glass, for instance, with other decorations in color is comparatively easy of adjustment. In domestic buildings, it is apparent, stained glass can only be very sparingly used, and that quite irrespective of the questions of light and prospect. Hangings, carpets, and furniture have to be provided for, and color to be employed under circumstances in which daylight and artificial light hold in their influences nearly an equal place. Such

colors as yellow and violet are so affected by artificial light that a new balance has to be maintained. The theatre and concert hall are, for the most part, to be considered as buildings the decoration of which supposes the use of artificial light, and the presence, as I have shewn, of large assemblies in gay and brilliant costumes. In domestic buildings the provision must be a mixed one; and the uses of the rooms to be decorated being diverse, different treatments are required. You have, no doubt, often observed the effect caused by admitting the morning beams into a room in which artificial lights are still burning—how the former are blued (violet-tinted), and the latter appear yellow. This explains simply the differences which obtain. Before pursuing the matter in detail, I would wish to say a word on some questions which, like the use of mosaic, fresco, marble, stained glass, and decoration in flat tints in the case of public buildings, have given rise to considerable debate. They are the imitation of costly woods and marbles—the use of stains on inferior woods and of varnishes. The simulation of oak, maple, &c., and of marbles and granites, I think should be discarded. Some of them on the low ground of cost alone; they can never be satisfactory as a decoration, unless executed by superior workmen; and then a scrutiny of price and result will not leave much in their favor, especially when it is considered that we are bound to show that successful adornment can be obtained by cheaper means. As in dress, we require consistency, and I submit that no portion of the decoration should differ widely in quality from its neighbours, allowance, of course, always being made for its position and uses. As respects stains on inferior woods, they seem to be quite consistent and in place, provided they be pure and clear. They have the great merits, in my eyes, in necessitating good workmanship and carefully-selected material, and differ completely in effect from painted wood-work used in a legitimate manner. They are frequently much more consistent with their surroundings than the same woods merely varnished or oiled; and I think it quite allowable to use stains of different shades separated, or even stencilled, with dense color, provided these colors follow harmonies of analogy rather than contrast. Still, flat tints of color to harmonize with hangings and furniture, (where the latter are of superior woods) will, in the majority of positions, be more consistent. As regards varnishes, I think these are often used unnecessarily, so as to increase cost, where the desired end can be otherwise attained, as in the use of metals; matting and burnishing afford valuable contrasts, so varnished and flatted surfaces may be judiciously used to enhance approximating tints, or to mark more strongly structural differences. The Germans use enamelled colours for their great durability, especially light tints and white, and think them worth the additional expense. There are some other matters which affect color and light in the decoration of domestic buildings which I may mention. I think the use of the French window, of the verandah, and of the conservatory or flower porch, worthy of extension. These may not seem, at first sight, to have much to do with internal decoration; but I think you will admit, that to bring the highest examples of decoration, these which are natural into direct contact and consistency with our works is a matter of some moment. At a time when so much attention is given to the arrangement of “bedding out” and what are called “foliage plants” on the natural principles of harmony and contrast we are considering, it is worth while seeing how we can best make the exterior and interior of our dwellings consistent. The window-gardening of the citizen, high and low, and the flower-plot of the cottager have received great attention of late, and must, in the future, have considerable influence in improving the national taste. I know we have to deplore garishness in decoration, excess in dress, and perhaps formality, and repetition, to weariness, in the pleasure-ground;

but these are often the natural results of excess—want of balance in a direction which is in itself certainly right and commendable.

To return—we say the verandah is unnecessary in our climate; the French window, or windows of that type, unsuitable for a similar reason, and because they are difficult to tighten sufficiently. I grant freely, that our sunshine is neither strong nor frequent; but the verandah, when properly placed and lighted, is a protection, and the French or similar window the most suitable means of enabling us, in a moment, to enjoy the sunshine and balmy air when they come. I am not greatly in favor of the large and heavy plates of glass, and consequent heavy frames, difficult to open and close, now in vogue, as I do not approve of the rivalry in large plate-glass windows, false or concealed construction—great display (with danger of faded goods), which is now happily causing a reaction in city shops.

The verandah and French window abound in countries with winters more severe than ours, and, as I have hinted, they moderate both light and ventilation, and connect the interior and exterior decoration of our dwellings. The lights of the fixed portions of such windows are suitable for the reception of ornaments in colored glass of quiet tints, not to injure the colors of hangings; and with a conservatory decorated on the principle of a foil to the flowers, and the pots containing them, become a consistent whole. I cannot conceive of any object more pleasing, in a climate such as ours, than the carefully and unostentatiously designed villa to be seen near English towns, with its brick of broken color, its tiled roof, channelled in arrangement, and varied by gable and dormer, its verandah and open casements, with green terrace and well-kept flower-beds, and the yellow gravel walk or drive, which unites the contrasting green and red.

In internal decoration generally, two or three questions may at once be put: Why should the dado not be restored to our rooms? Why should not the ordinary height of skirting be increased in this country? Why are our ceilings not colored? Among other answers the following are given. The fashion of arranging the furniture towards the centre of the room, and not against the walls, now obtains in drawing and morning-rooms, and round the table in dining-rooms, besides the cost of the dado and its rail or cornice. I think it is forgotten that all I have been urging must give a use to the dado, or its representative, apart from a protection from furniture. In order that the upper part of the wall may be light and still the colour of wood and covering in furniture, or (more important still) the dresses of the occupants may be improved, it is, I think, essential we should provide a dark and rather sombre back-ground. I would strongly recommend a return to a division of the wall by horizontal lines, in all cases which would permit of this. I will explain more particularly further on, and when we look at the other queries.

As respects the skirting, it certainly should be higher than is usual here. In London houses this is generally so; this as a protection in the using of furniture, as well as giving additional dignity in decorating the room.

As respects the ceiling and cornice, I think they should never be perfectly white. The practice is defended on the score of cleanliness, perhaps of diminished cost, of ease of renewal, of increase of apparent height of the room, &c. A great objection to the absence of colour lies in the fact that it is positively impossible to harmonise carpet, walls, and ceiling, except by a lightness in the scale of decoration, which has, in consequence, been pushed too far. Does it seem consistent that all wall decoration should be so crowned in cornice and ceiling, often (indeed, until lately, generally) between the darkest or most brilliant walls, a white cornice alone intervened. We have all, no doubt, often seen a flock paper of crimson associated with a white cornice and ceiling.

Under these circumstances, contrast of tone is almost at its maximum, and harmony (as I have said) impossible. Besides, it must be remembered, that in the great majority of rooms the only large spaces viewed in their entirety are the ceilings, and although placed above our heads, they are not out of sight, and the remains of old plaster-work in Dublin shew that in a different system of decoration they were not forgotten. I would like to see that chaste decoration in low relief revived. I would like to see it associated with colour and gilding equally chaste—as it so often was, but we are dealing with the question in general terms, and I am bound to shew that with flat ornament in colour on ordinary ceilings, with the simplest mouldings in the cornice, something satisfactory may be done. This want of consistency—of unity—in coloured decoration, has really led to extravagance. We meet with costly curtains, often trimmed with still more costly fringes and borders, with carpets and upholstery of the most brilliant hues, with carved furniture (uncomfortable, although precious) which would be very well if objects in a museum—even here, and in the picture gallery I have shewn white should not be in excess, where nothing should obtrude itself but the exhibit,—but sadly harsh and inconsistent with wall, and woodwork, and ceiling. I know this does not apply so much to the houses of the very wealthy, but even here it is not sufficiently recognised. In the case of humbler dwellings this want of consistency is the rule rather than the exception.

In an ordinary dwelling we have to deal with materials, which being cheap and more likely to change, should either be perfectly unostentatious (as should clothing under similar circumstances), or should be of such colours as contrasting, mutually purify each other—with stained and varnished deal, with quiet tints of complimentary colours, with furniture whose coverings enhance the colour of the woods employed, with a carpet which, free from brilliancy, throws up the colour of the chair, as the earth does leaf and flower, or as the grass-plot does the three combined inexpensive materials, completely distance more costly, injudiciously applied. It will, of course, be impossible, without a large number of diagrams and specimens of material, and within the limits of this paper, to do more than indicate how this may be accomplished, but I would appeal to your necessary professional acquaintance with the subject, and in view of the laws these rough diagrams explain, to prevent my being misunderstood. I think paint should be used on external work; under a verandah, or open porch the wood may be stained and varnished; in fences both of iron and wood, or trellis, where the trellis shews, green is, I think, a mistake; to get the full contrast of the colours of foliage it is evident that colours tending towards the complimentary red should be used, but these red colours should be broken, as I have explained, and where flowers abound we have further to avoid interference with their colours, which will probably vary considerably. We must not forget, however, that all flowers contrast with their leaves with a delicacy of change which only careful study can realise. I know that broken tints of red on great areas, and alone, are less pleasing than green, but we have to provide for the time of foliage and bloom rather than for their absence. I think in the entrance-hall and staircase the necessity of the dado very apparent. Should the woodwork of doors and staircase be stained and varnished, distemper or flat colours in oil will harmonise. The walls should not be varnished. If the woodwork be an oak colour, and harmony of contrast desired; the walls should be green or blue green in all cases, of course broken as I have explained. In the ceiling, on the same principle of contrast, the broken yellows—buff or citron—would have place, but to please popular notions I may say all introduction of colour in ceilings should be subdued. In the cornice, the tint of the wall and ceiling may be combined, and colours of the chocolate series

(redder, perhaps, as regards the cornice) in dividing lines, may be used. But I think it will be found that blue and blue-geys, with buff-greys as complimentary, are more satisfactory in ornament and frieze on the ceiling; and although I took a hall as a type, this consideration applies to all cases where a colour dominates in a ceiling. This case is a bad example of contrast, perhaps, and for lightness, one of analogy would probably be preferred where buff with chocolate border will contrast with blue. To obtain harmony of position, of course the entrance to the dwelling must be subordinated. This contrast with yellow is observed in furniture, where the yellow woods in chairs harmonise by contrast of colour with bright blue, as does mahogany with green, the darker the green, the leaning towards blue bringing out the orange of the newer wood. With lighter green covering you will perceive the same chairs will have the red leaning towards crimson more developed. I have not spoken before of tiling. In entrances of all kinds, and where carried through in passages and conservatories, the prevalence of positive color and of white seems unsuitable. Indeed, tile patterns cannot be too simple for conservatories, and halls and passages. I speak of small houses. The red, with green sparingly used, seems to me to harmonise with leaf and flower-pot, the shelf being subdued, and the woodwork generally containing the red-buff effect which tends to harmonise and unite the whole. In the hall, though richer tiles may be used, the same subdued color, however, should be followed. On the verandah, if consistency is sought, the same tile may be used, or buff and green. All excessive elaboration of pattern seems out of place in these thoroughfares, except (as I said) where great expenditure prevails, and even then this subordination should prevail.

As regards reception rooms, still following our type of building, the carpet meets our view. I think all carpets should be more subdued than they are. The carpet, the walls, and the curtains seem to me to present three types as to ornament and colour. The ceiling, if ornamented in colour, has much in common with the other two. First, as to ornament, let us take a form founded on those of nature, say a flower (as most frequent). You will understand me when I say for a carpet it should be on plan. On wall in section (in profile as to form); this, it is properly urged, is the natural arrangement. It is necessary that a floor ornament (if to be a distinct one—standing out from its ground) should radiate—it has to be seen from all points. On the wall, on the contrary, it is most pleasing with vertical elongation (viewed in profile), as in carving, so in paper staining, hundreds of new forms can thus be adopted, founded on natural ones. Mere geometrical ones are less pleasing, although crystals of snow, for instance, have furnished some beautiful examples. As regards color, I think the ground of all carpets should be dark—say black, dark blue, dark green—the pattern, if not decided (as just now supposed), should present an effect best described as a “bloom,” but little decided color dominating—the pattern equally diffused—all tile-work effects omitted, but should have a border, as in the case of tiles, if possible, and should be further separated from the wall by a stain on the floor, or by parquetrie. The skirtings will then be dark, the dado and its rail, or cornice, lighter than the skirting, the paper lighter still, and separated distinctly from the dado, the cornice have more color (more positive color), and the ceiling be of a tone lighter than the walls. As to this last, much should be granted to custom. Should the ceiling be plain, a stencilled ornament in the centre, a line and corners will give unity to the work. The curtains and chair-covers, &c., must stand out from their dado background, it being remembered that the curtains (when other than lace) have also to appear against the upper part of the wall, where violence of tone should not prevail, they can be complimentary to it, and the borders complimentary

to the color of the furniture—say the walls are buff, they may be blue with borders of subdued gold color (complimentary), the chairs may have this or similar tint, blue still deeper. Blue, red, or yellow (decided colors), which must be used sparingly but with effect;—when pure you will perceive they can have too marked contrasts of tone and of scale. The fashionable French ebony and gold furniture gives one where used quite pure, but with gloss, as in satin stuffs, they are never out of place, and with the lighter woods they also require brilliancy if not gloss; but it is apparent they can only be used with effect under conditions where space and costly surroundings obtain. We have then harmonies of analogy and of contrast,—the danger of analogy being deadness and of contrast violence, so that in great masses we naturally depart from the pure scale and take broken colors as a ground, using the primaries and secondaries in their purity to intensify them up to such a point as that none shall gain a decided advantage.

I said that a color has always a tendency to develop its complimentary by the law of simultaneous contrast. This will be seen in wall decorations; if I print a white pattern on a green ground, it will take distinctly the red complimentary tint, and become both more apparent and more pleasing. If I place a mahogany chair on a green carpet, the wood looks bright, and should it be covered with maroon, that color is also exalted. Were the covering crimson, and the carpet ground too decided, the contrast may be also too decided, unless otherwise balanced. So with the dado, against which the chair must shew; if too dark, the wood may be indistinct, so that we must see that this distinctness is preserved, although the color of the seat should, I think, more than restore the balance. You can see how this form of contrast is lost with white papers carried down to the skirting.

As regards the curtains, if the wall be very light, they must also be light, or they contrast too forcibly. You can see, on the contrary, how a room with a rosy grey in the wall (a broken color) will enhance green curtains sufficiently by contrast of tone, positively by contrast of color; how the dark carpet is separated by its border from the still darker skirting, if not separated by parquetry, and the eye passing up through dado—hanging of wall and cornice rests on a ceiling which, being tinted, completes a line of color duly graduated, and yet having at skirting, dado rail, and cornice marked lines, which emphasize the structural changes.

In the discussion which followed—

Mr. Thomas H. Longfield, hon. sec., said he quite endorsed Mr. Brien's remarks as to the beauty of the frescoes of Kaulback and Cornelius at Berlin and Munich, which seem so far to stand well. As to the practice of graining, he condemned it as a thorough sham, and not admissible in any really good work. The practice of staining woods was, in his opinion, quite a legitimate one. As to the decoration of ceilings, he advocated the adoption of delicate lines of color, with corner and centre ornaments. The practice of designing ceilings with fruit and flowers ready to drop on the spectator he considered very objectionable, as also were those ceilings painted in perspective, which could only look right from one point of view. Stencilled ornament ran the chance of being very much overdone, from the simplicity and cheapness of the process. Various colored tiles in a roof were very effective, the ends being three sides of an octagon. As to mosaic decoration, he considered it a most durable ornament, and admitting of great extension in its application. As to the decoration of the Sainte Chapelle at Paris, and the Crypt of St. Stephen at Westminster, he quite agreed with Mr. Brien as to their being overdone, and the architecture interfered with thereby. However exquisite the decorations were in themselves, there were some plain surfaces required to relieve the eye where there was such an *embarras de richesses*. In conclusion, he moved a warm vote of thanks to Mr. Brien for his able paper.

Mr. E. S. O'Callaghan, in seconding the vote of thanks, said that the association was very much indebted to Mr. Brien for his valuable paper. He considered Mr. Brien had thoroughly exhausted the subject.

Mr. J. L. Robinson, hon. sec., said that Mr. Brien

had not touched on another method of wall-decoration very much used by the ancients, viz., the encaustic where bees-wax was the medium used. Such paintings were very durable; and he thought the method might profitably be revived.

The chairman (Mr. R. S. Swan), in putting the vote, said he had listened with pleasure to Mr. Brien's paper, which was a very useful one.

Mr. Brien, in returning thanks, said that his paper had been prepared in great haste, as he had been called on to read it two months in advance of the time he promised. With regard to stencilling, he thought it a very useful mode of decoration, being comparatively inexpensive. He thought that, for domestic purposes, a description of stained glass might be used that was not strictly in accordance with the rules that govern ordinary stained glass. The frescoes at Westminster are covered with a bloom which quite destroys their effect. It is to be hoped that a new remedy (paraffin) now suggested will prove efficacious. As for mosaics being used, as Mr. Longfield said, to imitate stained glass, he would consider such practice a sham.

TO CORRESPONDENTS.

A CRIT.—We never touch on politics, except incidentally. We are aware, however, that "waiters on Providence" are numerous among our parliamentary as well as our municipal representatives. The improvement of our country and our city is the last thing thought of by "hangers-on" and expectants.

"BUILDERS' IRONMONGERY."—A great quantity of the cheap Brumagem manufacture that comes to this city is absolute rubbish. Sash fastenings and door furniture, and numerous domestic appliances, like the razors in the song, are made to sell, and those who have to use a certain description of them are sold.

THE PUBLIC LIBRARY QUESTION.—It would be the duty of the Corporation to establish a free library for our citizens; but how can we expect them to move in the matter of education, when they will not move in the matter of ridding our city of its chronic dirt?

COAL IN DUBLIN.—It was reported early in the present century, by some mineralogists connected with the Royal Dublin Society, that coal deposits might be found out and about Porterstown, on the Royal Canal. Indications were observable, but whether any proper examinations or borings took place we are unable to say.

R.H.A.—The matter rests with the "Hanging Committee." It is not the first time in this city that artists have complained that the best places were appropriated by members of such committees for their own works and those of their friends. As to the truth of the present allegation, we are not prepared to vouch.

HANDY ANDY.—Kane's "Industrial Resources of Ireland" and Wilkinson's "Ancient Architecture and Practical Geology" were first published, we believe, in 1845. In or about the same period the late Mr. Mulvaney's "Life of James Gandon" the architect, was also published.

"A VISIT TO EPPS'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cacao bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cacao, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cacao, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills.—*Civil Service Gazette*. Made simply with Boiling Water or Milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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TESTIMONIALS.

From WILLIAM TITE, Esq., M.P. for Bath, and Architect of the Royal Exchange, London.

House of Commons, 2nd March, 1864.

DEAR SIR,—In reply to your note, I beg to say that I have used both the sorts of Cement manufactured by your firm, and that of Messrs. Francis and Son; I mean the Cement usually called Roman Cement, or the more recent introduction of Portland Cement. I believe these Cements, manufactured by either of your firms, to be equally good. I know no difference, chemically or practically, between them; and I should use, and authorize to be used indifferently, either one or the other. You are at liberty to use this note, if you think it necessary.—I am, Dear Sir, your obedient servant, Messrs. White & Son. (Signed) WILLIAM TITE.

From R.O. MINNIE, Esq., Surveyor to Board of Ordnance, London. War Office, Pall Mall, London, S.W., 3rd March, 1864.

GENTLEMEN.—In reply to your request, I have much pleasure in stating my favourable opinion of the quality of your Portland and other Cements, which have been extensively used in the Public Works connected with the War Department at home and abroad, especially in several of the fortifications now being erected in this country. On all occasions within my knowledge the quality has been equal to that of any other manufacturer, and has given great satisfaction.—I am, gentlemen, your obedient servant. (Signed) R. O. MINNIE, Surveyor.

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The Irish Builder.

VOL. XIV.—No. 319.

*The Strength of Building Materials.**

FIRST NOTICE.

THE appearance of a new, enlarged, and revised edition of Mr. Stoney's invaluable work calls for more than a mere passing notice. The subject in its execution furnishes overwhelming testimony to the value of a technical education, without which no engineer is worth his salt, and we may go farther by saying without which no building operative is worth his wages, however handy he may be otherwise. Taking the book as a text, and independent of a mere review of its contents, a valuable essay might be written on the scope and value of technical knowledge for all workmen, but more particularly for those connected with building construction, whether their materials be timber, stone, iron, or other substances.

Although iron construction has not yet, in an architectural sense, developed much beauty of design in the hands of our engineers, it is nevertheless capable of being moulded into artistic forms at once ornamental and strong, suitable, lasting, and agreeable. Why have we so many hideous and clumsy erections? The causes may be traced not only to an ignorance of the artistic principles of design, but to an ignorance of the laws of strength. Tons on tons of valuable building materials are butchered and wasted yearly by incompetent workmen, engineers, architects, and builders. All are to blame, more or less; for, if the designers and the constructors knew the technical part of their profession, the workmen might be properly instructed and much valuable material saved. We see timber roofs and timber partitions erected often which show plainly the ignorance both of the architects as well as the builders and the workmen. Workmen generally, when working for others, have very little voice in the matter. If the strength of materials were understood, and the theory and principle of strains, many framed roofs might be constructed to the saving of large sums of money. Lighter materials, with a proper distribution of bracing timbers to resist the strain at particular points, and throw the weight on quarters calculated to sustain it best and most fittingly, could often be used. Iron roofs are now constructed of very light material, and tension and tying rods so distributed that large areas are covered, and no undue weight cast upon the supporting walls.

In timber construction, as well as in iron, the knowledge of the theory of strains will enable the builder and building operative to relieve the weight thrown upon walls and floors by partitions and roofs. Timber bridges are not often erected now in these countries, except for temporary purposes or during the re-building of old bridges; yet even in these

instances we have seen tons upon tons of timber actually sacrificed where there was no necessity for it. Erring on the side of strength is often adding to the danger, although it has often been held that it is better to err on the side of strength than weakness.

Although Mr. Stoney's work is essentially a work for the engineering profession, it is almost equally valuable to the architectural and building world. Beginning with the subject of strains, the work treats of it in all its forms—tensile strains producing fracture by tearing asunder; compressive strains produced by crushing; transverse strains produced by breaking across; shearing strains produced by cutting asunder; torsional strains produced by wrenching or twisting asunder. By the aid of five plates and 123 woodcuts the action of weights and strains acting on girders under various conditions is illustrated. The effects are shown in respect to girders, whether loaded on either end, in the middle, or at irregular intervals; or in the case of a railway bridge, when under the vibration of a heavily-loaded passing train.

The subject of all forms of used girders—flanged, and braced with continuous webs, parallel flanges and webs formed by isocoles, vertical and diagonal bracing, and braced girders with oblique or curved flanges—is ably treated by Mr. Stoney. Then we have tensile strength under numerous conditions, whether in wrought iron, cast iron, steel, iron wire, steel wire, bronze, alloys of copper, tin, chains, wire rope, timber, building materials, cordage, &c.

The volume treats upon various other important matters hitherto but slightly touched upon, and a large array of proofs are brought to bear upon the subject of temperature as affecting materials—flanges, cross-bracing, web, counter-bracing, cross-girders and platform, deflections, depth of girders on arches, camber, the connexion of various materials, estimation of girder work, and several examples and limits of the length of girders.

The following deductions in relation to timber are given on the authority of MM. Chevandier and Wertheim, who made a series of experiments:—1. The density of timber appears to vary but slightly with age. 2. The co-efficient of elasticity, on the contrary, diminishes beyond a certain age, and depends on the dryness and aspect as well as the nature of the soil in which the trees grow—northerly aspects and dry soils raising the co-efficient. 3. The co-efficient of elasticity is not severely affected by cutting trees before or after the sap is down. 4. Properly speaking, there is no true limit of elasticity, as there is always a permanent set along with an elastic elongation. 5. The limit of elasticity rises with the dryness of the timber, and wet timber takes a permanent set more readily than dry timber. 6. In timber artificially dried in a stove the limit of elasticity coincides nearly with the limit of rupture—i.e., such timber takes scarcely any permanent set. 7. Artificial drying greatly increases the stiffness of timber. It would appear then, as stated, that the limit of the elasticity of timber is not yet accurately defined, the coefficient of elasticity depending on the dryness of timber. We need many more experiments yet before we can arrive at any full or satisfactory knowledge as respecting the degree of elasticity of several kinds of building materials. Highly elastic timbers are very useful for some purposes. When green, some will take a permanent set

when exposed to the action of heat (fire), if kept in their intended position until cold. Steam or hot water, as is well known to many workers of wood, will render pieces of timber of certain thickness to be curved even to a complete circle; and some timbers will require but little extraneous aid to keep them permanently in their curved position when once bent. Timber that grows in a curvilinear form, particularly oak, is often utilized for many purposes; and formerly when our ships—merchant and war—were built of timber, crooked or curved timber or oak, and other hard woods, were much sought for, and even directions were issued to owners of plantations how to secure curved timber by training—bending and tying the branches in certain directions. Steaming and boiling timber, we know, renders it susceptible of being bent, and increases the stiffness. Yet we are doubtful if it adds to the durability; we fancy not. Larch is a timber which will remain sound under conditions that would soon destroy the usefulness of many other woods, and it is consequently used by engineers in various ways. Larch will bear a considerable amount of heat without cracking, warping, or shrinking. It retains its properties under all conditions of weather pretty well, and though not used much as a building material, it has its valuable use for railway sleepers, shafts of mill-wheels, planking of sides of vessels, and it has been used for pipes for the conveyance of water. For railways, canals, wooden bridges, and for posts intended to be driven deeply into the soil or under water, larch is considered better than oak or elm.

The variety of timber trees exceed the special uses for which timber is used. The quality of native timber trees is pretty well known, but there are many foreign timber trees of which we in these islands know but little as to their actual value. Nearly all of our building timber is imported now, and very little indeed of home-grown material goes into the market. As time wears on building timber will increase in price; so it becomes our duty to economise it, and we never can properly economise without technical knowledge. The book under notice is a valuable help in this direction.

Respecting stone, it is stated by Dr. Robinson that "hard bodies of an uniform glossy structure or granulated, like stones, are elastic through the whole extent of their cohesion, and take no set, but break at once when overloaded." Mr. Stoney doubts that this holds true of all granulated bodies like stones, and quotes from Mr. Mallet, who made some experiments on crushing small cubes of quartz and slate-rock from Holyhead, 0.107 inch upon each edge. Under the crushing experiments it appeared that the micaceous plates and aluminous clay particles interspersed through the mass gave away first the chlorite in the slate, and probably felspar crystals in the quartz rock next, and so on in order, until finally the elastic skeleton siliceous gives way and the rock is crushed. It is observed, adds Mr. Mallet, that this successive disintegration does not occur at equal pressures in the same quality and kind of rock, when compressed transverse to the lamination. Mr. Stoney thinks that probably Hooke's law applies up to the limit when the first crushing of the weakest ingredient occurs, and that what takes place subsequently corresponds with the intermittent way in which the wrought-iron in tension stretches once the limit of elasticity has

* "The Theory of Strains in Girders and Similar Structures, with Observations on the application of Theory to Practice, and Tables of Strength and other Properties of Materials." By Bindon B. Stoney, M.A., M. Inst. C.E. New Edition. London: Longmans, Green, and Co.

been passed. It would be very satisfactory to know something more on this point. We certainly do not incline to the opinion expressed by Dr. Robinson about granulated bodies taking no set. All kinds of building stone will give way if overloaded, but the pressure that is applied in crushing experiments is more severe than that to which stones are subjected when in position in a building. Ill construction and bad materials often go far in throwing discredit on scientific investigation. In a properly built structure there will be no undue pressure, the blocks of masonry will be properly jointed and bedded, the arches truly turned, the walls plumbed, the partitions rightly trussed, and the roof framed in a workmanlike manner—that is to say, all the work will be executed by skilled workmen. Scientific experiments on constructive materials can only have their true value and use when these materials are manipulated by the hands of intelligent workmen. We must end our notice here for to-day, but we shall return again for another look into Mr. Stoney's book, with a view of giving a further exposition of its contents, and making its teachings better known to our building workmen and others. It is the best book of its class that has yet appeared.

OBSTRUCTIONS IN THOROUGHFARES.

THE growing obstructions which have been impeding the public traffic, passenger and vehicular, for some years past in this city, has culminated to a point at which it is simply intolerable. Shopkeepers and traders have a right to pile their goods to any extent within their own window-panes, but it is quite another matter when they begin to impede the "right of way" to which every citizen is entitled. Trade is indeed now carried to a high pitch, and offensively so. The houses in some of our streets show the windows on almost every storey not only packed up with goods within, but with goods suspended from the window-cills without,—chairs, carpets, calves, pigs, and poultry, and sundry other dangerous and dripping articles, not only liable to fall and break people's heads, but, when not falling, spewing down matter on the hats and clothes of the passers. North and south of the Liffey these dangerous and unsightly nuisances exist,—we say nuisances advisedly, for we are clearly of opinion they come under the clauses of the "Nuisances Removal Acts," or some of our other sanitary and towns improvement statutes. On the north side of the river we would instance the cases of shops in Moore-street, North Earl and Talbot streets, and on the south side an equal number of flagrant instances could be pointed out. Pork butchers, beef butchers, poulterers, and pickled cheek vendors have begun to monopolise more than half the space of our footways with their stands, barrels, and their overhanging awnings. Sun-shades would seem to be as indispensable to them in the winter as in the summer. Some years ago awnings only extended a few feet out from the shop-windows, but now they extend half way over the footways, and in some cases we have noticed them extending over the whole breadth of the footway to their supports by the kerbstone.

We call upon the local authorities to institute measures at once to restrict these growing obstructions and positive nuisances. If our local authorities do not move, the Police

Commissioners through the Irish Executive can do so. If a stop is not put to the nuisance at once, several of our north city streets will soon become second Bride's-alleys and Bull-alleys of lumber, trumpery, and offensive refuse. Our flagways in some streets have already become briny and slippery from the leakings of pickle-tubs and herring-barrels, and in other streets the breadth of the pathways, from the obstructions, is insufficient for the crowded traffic, which at some hours of the day and night forces people to pass along in the side channels if they are in a hurry, through business engagements. We do not desire oppressive restrictions to be put upon any of our shopkeepers, but we do desire to see them held amenable to proper and judicious regulations that will secure the rights of the public and the comfort and safety of all passengers on footways and roadways.

A public market and an ordinary fair are exceptional matters; but even in these certain defined regulations are necessary for the placement of stalls and preserving free passages for ingress and egress. Our public thoroughfares must not, however, be allowed to degenerate into fairs or market-places for the accommodation of the inordinate ambition or vanity of rival shopkeepers who turn their shops inside out to show their wonderful trade. It was often remarked in old times that outside the booths at Donnybrook Fair the lookers-on saw more sights and heard more fun than they could ever find within. Our present-day race of shopmen have taken a leaf out of the book of the strolling players. They employ leather-lunged "cheap Jacks" to keep sentinel outside on the footway, to roar out "Buy, buy, buy." Unlike the call of the clown on the platform of a Donnybrook booth, there is neither fun nor humour in these flag assistants' voices, and their employ only adds to the already existing nuisance which the inanimate articles occasion.

We trust we have said enough for to-day in directing public attention to a growing and rapidly-extending evil; if not, we will be forced to bring matters to a direct issue on the next occasion, by taking hold of some of the bulls by their horns, and trying what a legal torsion will do in clearing the public thoroughfares of their dangerous obstructions and nuisances.

Since writing the above we had occasion to look into the bearings of the "Towns Improvement Act," and we are confirmed in our opinion that it applies to the obstructions and nuisances complained of, and to others which we could have mentioned in our remarks. We therefore call upon the local authorities to enforce the act, and, failing to do so, the police constables, with the sanction of the Commissioners, are fully empowered to see that all obstructions and nuisances are removed within a reasonable time, on giving notice to the offenders who are acting in violation of the provisions of the act.

HINTS TO HOUSE-PAINTERS, AND OTHERS.

THE Painters' Company, or ancient City guild of Painters, one of the minor corporations of London, are once more moving in the matter of technical education—a subject we have often urged upon the attention of parties in this city. The London guild offer the following prizes:—For decorative painting, £5 and £3; for painting from natural foliage or flowers, the same sums; for freehand draw-

ing and design, £3 and £2; for marbling and graining, the like sums; with the addition to the first prize in each class of the company's silver medal, and to the second prize of the company's bronze medal. The company is also arranging for the delivery of lectures for advancing technical education amongst the members of the trade; and Mr. John Gregory Grace will deliver, on the 15th of May next, a lecture "On Colour," addressed to operatives of the painting trade. These prizes appear to be confined to the operatives of London and its vicinity.

The Royal Dublin Society, through the South Kensington Department, could, we think, initiate a series of prizes for the operatives of the painting trade in this city, and for the delivery of a series of lectures. The house-painting trade of Dublin has produced in times past artists as well as operatives, and writers and illustrators of antiquarian and archaeological subjects. We may instance one noticeable example—that of Robert Armstrong, a journeyman house-painter, at one time of Ranelagh, and subsequently a parish schoolmaster at Raheny. Armstrong became a contributor of antiquarian articles to the old *Dublin Penny Journal*, and with as facile a pencil as pen he delineated several ancient ecclesiastical structures in the neighbourhood of Dublin and Drogheda. The late George Petrie had a high opinion of his ability, and brought him into favourable notice. We have house-painters at present in our midst who can execute respectable works on canvas, as well as perform good marbling and graining. There is a great lack, however, of the theory, knowledge, and chemistry of colors amongst our house-painters, and a series of lectures would greatly assist the young and industrious members of the craft to execute better work and exercise their abilities in other branches of the decorative arts, in seasons when the ordinary business of their trade is dull.

There is ample room also for improvement amongst paper-stainers. The great majority of the patterns of our wall-papers are a libel on the art of design, and an outrage both on nature and art. In a sanitary point of view there is need for a reform in the matter of our very cheap as well as our expensive paper-hangings. Many of them are positively injurious to health from their poisonous ingredients. The colours are not fixed, consequently, through damp, they give off exhalations which sap the foundations of the health of many, young and aged. The very cheap and inferior paper-hangings are a perfect nuisance and calamity in the houses of the poor. People often blindly purchase a few yards of cheap paper-hangings for the purpose of covering over the defects brought on by dampness in walls, and by doing so, they are only multiplying the evil effects. The covering with paper of an eyesore produced by dampness or dry-rot on the wall of a room, is like the covering of the issue in the human system with a sticking of plaster. It can never effect a cure, but only adds to the disease.

While speaking of the painting trade, we may here remark that painters individually have more cause, perhaps, than any other members of the building trade to pay attention to their persons. They are subject to more than one class of peculiar disease; but the characteristic disease of their craft is known as painters' cholera—a severe dry pain in the belly, produced by the poison in the lead. The bath and frequent ablutions are

indispensable to house-painters. They should never retire to bed, after their work, without a careful washing and cleansing of their nails, if they would desire sound sleep. House-painters, like artists and musicians, are remarked for wearing long hair; but on the score of health and cleanliness we would prefer to see our house-painters wearing their hair cut short. If they will wear long hair, we would rather see a thick moustache on their upper lip and a good beard on their chin, which, by combining, would act as a sort of respirator, and have its good uses in a trade whose members are subject to foul inhalations and colds.

We have digressed from our opening remarks, but there is no apology needed in dealing with such a subject as health. If the health is not cared for, all aspirations, all industry and devotedness to one's craft or art becomes a painful toil and a misery instead of a happiness. We trust that our painters will individually assist in the sanitary and operative reforms needed in their trade, and that public opinion and sympathy in this city will not be found wanting to assist them when they earnestly set about helping themselves.

CHICAGO.

THE American Continent, and particularly the United States, has come to be looked upon as the land of great rivers, great cataracts, great railways, great enterprise, and (witness the Erie Ring, &c.) great frauds. The diligence and speed with which an immense railway 2,000 miles long was constructed, in the face of the greatest difficulties, from the nature of the ground and the opposition of savage tribes in, we may say, a few months, was an enterprise calculated to paralyse with astonishment the more phlegmatic and easy-going inhabitants of the Old World, who are accustomed to see everything move by slow stages, in recognition of the old adage, 'the more haste the less speed.' In no town in the States is this go-ahead principle recognised more than in the capital of the West—a town that has sprung in a few years from being an insignificant village into the second city of the Union. Some years ago, waterworks on a gigantic scale were undertaken to supply the city with pure water, one of the principal features of which consisted of a tunnel two miles long, under Lake Erie, in order to procure water uncontaminated with refuse from the shore. In October, 1871, one of the largest conflagrations that the world has ever seen reduced the principal part of the city to ashes, and threw thousands of families out of employment, and left those who a few hours before were in the midst of affluence, homeless and destitute. Before the embers had died out, and whilst the fire was still smouldering in their midst, the go-ahead inhabitants of this go-ahead city set themselves to repair the ravages of the flames, and to reconstruct their city on a scale of still greater magnificence than before. Whilst we write, 100,000 workmen are still engaged in the task of re-edification. We have before us a work,* published twelve months after the conflagration, embellished with eighty woodcuts of buildings that have sprung into existence in that short period—gigantic stores, immense hotels, banks, and churches. We regret that we cannot commend either the style of architecture or the design of the details, which are anything but worthy of imitation. We may point out as the least objectionable, the New Tribune Building, the Kendal Block, and the dry goods store, corner of Madison and Franklin-streets. Strange to say, of the eighty buildings illustrated, but two are of Gothic design (?), which manifestly shews

that the fashionable style of this country is at present "under a cloud" with our American cousins. The lavish expenditure necessary to raise such exceedingly elaborate and expensive buildings speaks well for the wealth of the citizens. We are glad to see several names which we recognise as those of fellow-countrymen, who, we understand, have settled in Chicago in greater numbers than in any other city, New York excepted. The work under notice is dedicated to the Hon. Cyrus H. McCormick, whose "liberality and vigorous activity sustained the credit of our merchants in the dark days of doubt immediately following the fire."

In conclusion we may say, that the book is very creditably printed and got up, and is deserving of a large circulation, as its price, seventy-five cents, places it within the reach of all. It proves particularly valuable being, as it is, a record of what may be done by enterprise and perseverance in the midst of panic and difficulties.

THE MIDLAND RAILWAY DOCKS.

THESE works, of which we gave a detailed account last year, are approaching completion. The limestone used in these works, we may remark, is native material, and was quarried at Multyfarnham and Oranmore. The masonry presents a solid front and is firmly bedded, and the workmanship is commensurate with the requirements. The wharfage facilities rendered available by the new works will be a great advantage to traffic of the Midland Railway line. By the construction of the new set of docks at Sheriff-street, reaching to the iron bridge of the Drogheda line, nearly 1,800 feet of wharfage will be afforded on either side. The Company will, no doubt, save a large sum yearly by their new work, in appliances which they formerly had to spend in cartage. Behind the lattice bridge on the Drogheda line to Newcomen-bridge a wharfage of about 500 feet on either side will be provided. The old bridge over the canal, by being lowered some feet and rebuilt, renders the ascent from the city side and that of the northern suburbs a good deal easier. The expenses of the new Newcomen-bridge were borne by the Midland Railway, the Clontarf inhabitants, the Tramways Company, and the Corporation respectively. The tram rails are already laid across the new bridge. A very short time will now suffice to complete the entire works, which have been since their commencement under the direction of Mr. James Price, C.E.

MILITARY CRAFTSMEN AND PIONEERS.

THE creation of an enlarged body of skilled artisans in the army, in addition to the already existing pioneer force, is likely to lead to many changes within and to affect sundry interests without the army. The employment of the soldiers of each regiment at trades, in pursuance to the new regulations and orders, will in time do away with some of our grades of contractors who are in the habit of tendering for the execution of work in different branches of trade. The small class of contractors in the building line, who contract for repairs and damages, are likely to be superseded altogether by the creation of the new artisan and pioneer force. The pioneer force in each regiment will be composed of men who, in addition to their ordinary duties of pioneers, will be able to impart instruction to others. The following distribution of the trades is laid down:—One sergeant, who is a carpenter by trade; three carpenters; two bricklayers, one able to plaster, one able to slate; one smith, able to shoe horses; one mason, able also to cut stone; one painter and glazier; two plumbers and gasfitters; total, one sergeant and ten pioneers. The pioneers may be employed on work for the Royal Engineer or the Control Departments. There is a variety of

regulations in the new scheme for their government, distribution, and employment, which is worthy of the serious attention of the nation at large.

Men belonging to the building trades—carpenters, masons, bricklayers, joiners, millwrights, plumbers, sawyers, stone-cutters, glaziers, and other trades special to the Royal Engineers, are to be tested and classified by the Royal Engineer Department. Those coming under the Control Department are such trades as saddlers, coopers, saddle-tree-makers, shoeing-smiths, collar-makers, carriage-smiths, wheelers, armourers, &c. Work requiring to be done for the public service is to have priority, and the preference will be given to superior hands. As circumstances permit, work will be performed for the regiments or private jobs for the officers. The conditions under which the pioneers may be employed on work for the Royal Engineers or the Control Department—first, by contract made with the pioneer-sergeant; secondly, by piece-work; thirdly, by day-work or by the hour. To meet the cost of repairing tools a fund will be created by deducting a sum not exceeding five per cent. from the payments made for work performed. The new force in each regiment is to be made self-supporting, not taking into view the ordinary payments made to the men as soldiers alone.

We have not space to go into the whole particulars of this new army scheme, but we see in its extension both good and evil, if it be not properly confined within due limits. It remains to be seen how the system will work in regard to short service. The system may also at one time or another come into violent contact with members of trades' bodies outside the army in time of strikes. Soldiers have already been drafted into the harvest field, not when there was a scarcity of hands, but on the occasion of a dispute between the agricultural labourers and the farmers. It would not be a pleasant prospect in times of a protracted building strike to see a number of soldiers working on several buildings in cities and towns, notwithstanding that they were working on buildings intended for the Government. Civil strife would be likely; but perhaps the Government would be equal to the occasion, and would send out companies of armed soldiers to protect their comrades at work.

We will likely look a little further into the bearings of the subject at a future opportunity.

ARCHITECTURAL ASSOCIATION OF IRELAND.

THIS Association met on Thursday evening last, in the rooms, 212 Great Brunswick-street. J. J. O'Callaghan, Esq., in the chair. There were present:—R. S. Swan, T. H. Longfield (hon. sec.), J. P. Davis, E. L. Clarke, W. Farrell, J. Knox, C. H. Brien, H. Keogh, J. Briggs, J. E. J. Wilson, A. W. Robinson, A. E. Robinson, A. E. Murray, E. J. O'Callaghan, D. J. Freeman, J. L. Robinson (hon. sec.). Visitors:—Henry MacManus, R.H.A., J. O'Neill, P. Roe, &c.

After a ballot, Frederick Stokes and J. Duff were declared duly elected as members.

S. Symes and J. O'Neill were proposed for membership.

A special business meeting was afterwards held. A resolution was passed that "on and after the commencement of next session an entrance fee of 10s. 6d. shall be paid by all new members in addition to their subscriptions." It was also resolved that a Vice-President should be elected, and that the following sentence in Rule IV. should be struck out:—"No Fellow who may be on the council of the Royal Institute of the Architects of Ireland shall be eligible to be elected on the Committee."

The principal portion of the evening was occupied in the reading of an exceedingly interesting paper by Henry MacManus, R.H.A., of which we print a portion in our present issue, with prefatory remarks made by the lecturer.

* "One Year from the Fire: Chicago Illustrated." J. M. Wing & Co., Chicago; Trubner & Co., London.

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

ARDMORE—continued.

THE CATHEDRAL.

THIS edifice consists of a simple nave and chancel, all the walls of which are standing nearly to their original heights, though much weather-worn and disintegrated.

The masonry of the nave is of coarse, spawled rubble, with the exception of a portion of the lower part of north wall, which shews work of a better character. The western ends of north and south walls of chancel are of massive masonry, the stones large and dressed to their natural forms and well fitted; the eastern end is of coarse rubble same as nave. We have in this building, evidently, three different dates indicated by the masonry; the earliest, and as usual the best, in portions of the chancel walls; the second, the work in the lower part of north wall of nave; the third, the coarse work of the nave and chancel, which we have reason to believe were nearly rebuilt at the very commencement of the thirteenth century in a transitional style. The principal entrance is at the north side towards the west end. It was a fine semicircular-headed doorway, with moulded arch and label, the former resting on a pair of shafts having carved caps and bases; the shafts are gone, but the caps and moulded bases remain, much mutilated. This ope has been built up and a narrower one inserted, with a pointed chamfered head. There was also a doorway in the south wall, which is now built up. Dimensions of nave, 75 ft. by 24 ft. clear of walls.

There are two window-opes in the north wall of nave; they are of small size, semicircular-headed, and have large inward splays. The jambs and heads are moulded; they finish externally with a label, which returns on the piers the entire length of flank wall; internally they finish with a similar label, which is composed of a square and hollow; at the south side are two similar window-opes. High up in the west gable is another semicircular-headed ope of larger size, which was enriched internally with a pair of jamb-shafts supporting a moulded arch. They have carved caps of transitional character; one of them is shewn on accompanying lithograph.

The space between the windows in the north wall is occupied by a line of slightly sunk panels having pointed arches, slightly chamfered, the mullions resting on a plain string; between the window and the west gable is a series of rectangular panels, sunk in the masonry and on the same level. In the north wall is a recessed tomb with a trefoil arch, having good mouldings springing from jamb-shafts, with moulded caps and bases; it is crowned by an effective label, the ends of which terminate in knots of foliage. In the south wall is another recessed tomb of plainer form.

The chancel arch is pointed, with rich mouldings of an early character, the label at both sides a square and chamfer; the arch springs from massive engaged shafts, having richly carved caps of transitional character; the abacus is bold and effective, and octagonal on plan. One side of the southern cap is carved into the usual Romanesque fluted form, while the rest of the base is enriched with foliage of a curious but pleasing character, somewhat similar to First Pointed work (see lithograph).

The chancel is 84 ft. 4 in. in length by 18 ft. 8 in. in breadth, in clear of walls. The east window was apparently a traceried one, but its tracery is gone. There is a fifteenth-century door at the south side, now built up; in the recess of this doorway stands the fine Ogham-inscribed stone taken out of the east gable of St. Declan's Oratory.

The chancel presents no other feature of any interest. It has been much patched and

altered, the later workmanship being invariably in bad taste, and badly executed. In the nave is preserved another Ogham-inscribed stone, which bears the name AMADU. In the graveyard was also found a fragment of an inscription in the same characters, and which is now in the Museum of the Royal Irish Academy. It bears the formula ANACI MAQR, i.e. (stone of) Anac the son of Scattered about the nave and chancel are a number of incised medieval grave-slabs.

One of the most interesting features, however, in this edifice is the series of antique sculptures that have been inserted in the external face of west gable, and which are arranged as follows:—At about 10 ft. from the present level runs a rounded string-course the entire breadth of the gable, upon which rests a range of semicircular-headed panels, formed of very slender shafts having plain caps and bases, the arches over which are much worn, but appear to have had a torus on the arrises. These panels are about 8 ft. in height, and 1 ft. 8 in. wide; they are immediately under the sill of the west window. The panels are at present thirteen in number; one is missing from the centre, where a breach in the masonry occurs, and there is every appearance of their having been continued to the south quoin, a portion of which has fallen. It has been stated by local authorities that the number was formerly seventeen. These panels contained a series of figures in low relief; nine of them at present exhibit remains of these effigies, two of them shewing groups of two in each. These sculptures are so disintegrated and defaced by weather-wear, that it is impossible to attempt any appropriation of them; all the existing figures appear to be draped in long robes.

Immediately under the above are two semicircular panels, formed by a rounded moulding resting on a horizontal string-course, the length of their chords being about 7 ft. The northern one contains three smaller panels sunk in the masonry, formed of plain shafts without caps or bases, supporting semicircular arches. The centre compartment of this group exhibits the Temptation in the Garden; the tree with the serpent twined round it, and Adam and Eve on either side. In the right hand panel is a kneeling figure bearing a spear in a sloping position on his shoulder; before him stands a draped figure, apparently an ecclesiastic, with his hand raised in the act of benediction. This has been supposed by some to represent the conversion of the pagan prince of the Desii, by St. Declan. This is, however, but supposition. It looks to me more likely to represent an armed prince or chieftain going forth to war, craving the church's benediction on his enterprise. The left hand panel shews us a figure of an animal closely resembling a lamb, probably an emblem of our Saviour.

The southern compartment is divided into two groups of sculptures; the lower one consists of five semicircular-headed panels, formed as above mentioned, and resting on the string-course; that on the extreme left of the spectator shews a female figure, or an ecclesiastic in long robes, seated before a highly-raised altar, on which stands the figure of a cow or ox. The other four panels contain each a figure, all facing one way, as if in procession, the foremost, and apparently principal one, has a long beard and hair; the others are beardless, and seem to be attendants or followers; they are all armed, and carry their weapons on their shoulders, one of which is positively a battle-axe. This group has given rise to some speculation. I believe it to represent a scene of paganism in contradistinction with the christian scenes depicted in the corresponding compartment. We have abundant reason for believing that the Bovine Cultus was prevalent in Ireland before christianity, and which has most powerfully impressed itself on our topography. Thus we have our Loughs Bo-Fin and Bo-Dearg, i.e., Lakes of the White and Red Cow. Islands also named after them—Innis Bo-Fin and Innis Bo-Dearg; ancient roadways or tracks named Boher Bo-Fin and Boher Bo-Ruadh.

Legends connected with the White Cow are numberless among the peasantry of the south and west, and which generally ascribe to it a supernatural intelligence, and acts of benevolence towards humanity. This cow-reverence has been somehow mixed up with our early christianity. In several instances we have cow legends associated with the lives of our saints. One of these is connected with Ardmore. It is fabled that St. Patriak, when living at Cashel, had a favourite white cow, whose calf was stolen and carried off to Ardmore; the animal, furious at its loss, followed the robbers, tearing up the ground with its horns as it rushed along, and forming two trenches which can be traced in many places to the present day. This trackway is named by the peasantry, Rian-bo-Phadrig, that is, the track of Patrick's cow. Smith, in his History of Waterford, thus alludes to it:—"In the Barony of Coshmore and Coshbride are two remarkable pieces of antiquity, which still remain there, and of which little account can be given. The first is a large double trench, which the Irish call Rian-bo-Padriac, or the Trench of St. Patrick's Cow. It is a double dike, still to be seen in the mountainous parts of this barony, beginning in this county to the eastward of Knockmole-down, and running in a direct line towards Ardmore, crossing the country through the deer-park of Lismore, and taking in a course of sixteen or eighteen miles. The country-people affirm that it might be traced from its entrance into this county as far as Cashel." (p. 355). Other versions of the legend state, that the cow was stolen from Cashel and brought to Ardmore, from whence it made its escape, and facing homewards, tore up the track as already mentioned. This last version bears some resemblance to the ancient tale of the Tain-bo-Cualgne, or the cow spoil of Cooley, as found in the oldest of our MSS., the *Leubhar-na-Huidhri*. This cow-legend is strongly corroborated in the minds of the peasantry by local topography. They point triumphantly to the ancient trenches, and along their course they will point you out Carn-na-Daimh-Derg, i.e., the Cairn of the Red Ox; and farther on, Macha-na-Bo-Baine, i.e., the Milking-place of the White Cow. From these circumstances we may reasonably surmise, that the cow standing on the altar in the Ardmore sculptures must have had some peculiar significance and reference to a cultus long passed away, when this work was executed. The cow was held in reverence and worshipped by most of the nations of antiquity, notably by the Egyptians, from whom the Gaedhil claim a descent. It was the most important feature in the religious system of that ancient people, from whom it was borrowed by the Romans, by whom a temple to Isis was erected at Rome. That useful animal has been worshipped in India from the remotest times, and still receives the religious reverence of 800,000,000 of devotees.

The other group of this compartment is above the one last described, and immediately under the crown of the arch-line. It represents the Judgment of Solomon. The king is seated in a well-defined chair, holding a sword in his hand; before him stands a woman holding forth a child with both hands; immediately behind her is the second woman with extended arms, as if to stay the dividing of her child; in the background is a bearded harper, in a sitting posture, his harp resting on his knee; the form of the instrument remarkably like the ancient examples which have come down to us. It is not fair to judge these sculptures in their present mutilated state; yet the true artist, from the outline and grouping of the figures, cannot fail to detect traces of culture and artistic feeling. At the north-west angle of the nave is a huge unshapely buttress, and at the east end of chancel two others.

The age of the principal part of this church can, I think, be ascertained. A writer in the *Gentleman's Magazine* for September, 1864, quotes the following passage from the *Annals of Innisfallen*:—"A.D. 1203. Moelettrim O'Deubraitha, the reverend priest of Ard-

more, died after he had ordered and finished the church of Ardmore."

There can be no doubt that the principal part of the present building was erected about the above date, i.e., towards the close of the twelfth century. The transitional character of the details of the doors, windows, and chancel-arch corroborate the above date; and here I would remark, that these details shew quite a different treatment from the transitional work of the Anglo-Norman of the same period. There is a delicacy and refinement of artistic feeling displayed in them peculiarly Celtic, and such as no imported Norman workmen could design.

The west gable is undoubtedly of the period named, but the sculptures appear to me to have belonged to the older church. If they were originally designed to occupy their positions in the present west wall, they would have been more symmetrically disposed, and made to form a portion of the design. As it is, the two principal panels are not in the centre of the gable, but are unequally placed, being more towards the north side. A careful examination of the stone-work of the panels shew evidence of patching and substitution, and an irregularity in the arches, as if they had been removed from another position, and had been built in here for their preservation, the damaged or missing portions having been made good. My description of these sculptures are the result of a careful examination made on the spot, assisted by a large-sized photograph taken by Mr. Humphrey H. Haines, of Cork, the best amateur photographer I know of, and to whom I am indebted for a number of beautifully-executed plates of ancient architectural remains in the south of Ireland.

Before I leave this group of buildings I cannot refrain from remarking upon the curious considerations that arise from a comparison of the masonry of the three structures. Tracing down from the earliest erected to the latest, we should expect to see a gradual development of the masonic craft, and that the walling of so important a building as the Cathedral, erected in the end of the twelfth century, should be of a finer class of work than that of the fifth-century Oratory; yet, strange to say, the contrary is the fact, while the fragments of the walls of an intermediate church, probably erected in the eighth or ninth century, and preserved in the Cathedral (in accordance with a praiseworthy ancient custom, of which we have many examples in Ireland), shew the same marked distinction.

Again, we find that the masonry of the Round Tower is of a far superior class to that of any of the churches. I am aware that it has been asserted that this Tower was coeval with the Cathedral, and erected as a detached belfry to it; but, as far as the characteristics of the respective structures reveal to us, no such conclusion can be drawn, as there is not a feature in common between them; neither can it be credited, that the pious hands which raised those venerable walls, when Ardmore was the seat of a bishopric, would have used so inferior a class of masonry in its construction, while they erected this detached tower, at a distance of 70 ft., of the very finest class of ashlar masonry. We know that the Christian Temple has always been the very first consideration, and that no matter how poor the congregation, their very best efforts and means were always devoted to erecting and beautifying it.

We must conclude that, plain as is its masonry and few its ornaments, it was the best they could accomplish, and that the erection of such a costly and splendid piece of workmanship as the Tower, could not have been undertaken at the same period and by the same builders. As a practical question of relative value, the walls of the Cathedral could have been erected twice over for the cost of the Round Tower, remembering that the materials of the former were procured on the spot, and used undressed, while those of the latter were brought from a distance of five or six miles, and finely wrought on beds, joints, and faces, both for the external and

internal walling, while the cost of labour increased every foot in height the structure was raised. It is not my intention to go into the question of the age of this Tower, which presents to us very peculiar features, but I contend that no inference as to the date of its erection can be drawn from its architectural features, which are such as may be found in buildings of even a pre-Christian age.

DISERT DEGLAIN.

This ruined church is situated on the sea-shore, about half a mile from the village; it is sometimes named Teampuil Deascart, or the Southern Church. It is in a very ruined condition, and appears to have been originally a building of considerable antiquity, from the massive character of the masonry in portions of the walling, the stones being of large size and well fitted. Its dimensions are 66 ft. in length, by 18 ft. in breadth, clear of walls.

The original doorway was in the west gable, where there is now a large breach. A more modern one is in the south wall, semi-circular-headed outside, but flat-headed inside, formed by a horizontal arch, the key-stone being apparently turned upside down, a masonic trick to puzzle the vulgar, as the joint is but superficial.

The only window remaining is in the west gable; it is a quadrangular ope with sloping jambs, and of small size. It is stated that the east gable was blown down about forty years since, at which time it showed a two-light pointed window.

It is traditionally believed that this was the first church erected by St. Declan at Ardmore, in commemoration of his landing at this spot on his wonderful megalithic raft; but as this whole narration is of a fabulous character we cannot attach any importance to it. There cannot be a shadow of doubt but the first sacred edifice erected in this place was the Oratory. Another tradition ascribes its construction to three Spanish noblemen, who were saved from a shipwreck on this wild coast; but this is a common belief respecting churches standing near the sea-side.

THE HOLY WELL.

Tubber Deglain, i.e., Declan's Well, is situated a few yards west of Disert Deglain.

CLOCH DEGLAIN.

This is a large boulder of conglomerate or pudding-stone, lying poised on two points of a rock on the strand; beneath it is an orifice of moderate size. It is not of the same formation as the rocks in the locality, but must have strayed, or have been brought from the Hills, which are a few miles from Ardmore, where such a geological formation is to be found. This is the celebrated Cloch-Naomh-Deglain, or Sacred Stone of Declan, upon which he is fabled to have sailed all the way from Rome. He must have had a mighty uncomfortable seat, for the stone is as round as a barrel; but this, of course, makes the miracle the more remarkable.

There is not in Ireland an object held in such veneration as this. Here, the pilgrims attending the patron on the 24th July, finish the performance of the usual ritual by squeezing themselves through the orifice three times. This passing through the hole is considered a specific for rheumatic affections, particularly in the back and head. Women, too, make use of it for diseases peculiar to them; but no person having on or about them any stolen or borrowed article can derive any benefit from the performance.

This is a remnant of the pagan superstition of the Holed-Stone, of which we have many examples in Ireland, Scotland, and Cornwall, and which is still practised in Northern India. For further information on this subject, see a paper by the author in the *Gentleman's Magazine* for December, 1864.

CLOCH DAHA.

This stone appears to have been associated with certain rites preserved among the peasantry from a very remote period, and certainly not of a christian character. It

derives its name from *Cloch*, a stone, and *Dagh*, good; the nature of the rites associated with it, and the meaning attached to them by the peasantry giving scandal, the stone was removed from its original locality, and was buried, since which the ceremonial of the Cloch Daha is but the theme of peasants' gossip. Mr. Edward Fitzgerald, in one of his interesting and gossiping papers in the *Journal of the Kilkenny Archaeological Society*, v. 1856-7, p. 43, thus describes it:—"Another famous stone is also at Ardmore; but latterly is little known, as it has been buried for some time past in a garden in front of Mr. Bagg's cottage. This stone must be classed among those connected with the sports and pastimes of days gone by, though I have not seen any resemblance to the ceremonies connected with it among Strutt's descriptions. It is called the Cloch-Daha, i.e., the Stone of Daghdha, King of the Tuatha De Dananus (there is a monument at Ballymote, County of Sligo, called Bod-an-Daghdha). This relic lay on the road-side, nearly opposite the present new church. It is a stone of about 2 ft. long, by 18 in. in breadth, and 18 in. in depth, and is hollowed into an oval trough-like shape,—probably an old pagan 'rock-bason,' and may be the Cloch Deglain, mentioned in the Saint's life, which bore the impression of the infant's head. There is a hole in the centre, in which, on Ash-Wednesday, the sporting-bachelors of the village stuck a wattle with a quantity of tow tied to its top; they then scoured the village and vicinity, and brought with them all the old maidens they could muster, and made them dance round the Cloch-Daha, holding the pendent tow, and spinning it whilst dancing; they then terminated their amusements by dragging them through the village, seated on old logs of wood." The student of Phallic antiquities cannot fail to discern in the above description the true nature of the rites performed before the Cloch-Daha, which was, in all probability, the base of such a monument as the Bod-an-Daghdha above alluded to, and which had been at some period destroyed, for the purpose of weaning the people from their unseemly superstitions, but not altogether successfully, as we have seen that the wattle and the tuft of tow was made to do duty for the original Bod—the ghost of the original ceremonial being kept up to a late period. There is still standing at Tara a remarkable monument, called the *Bod Fearghais*, i.e., *Penis Fergusi*. A drawing of it will be found in the late Dr. Petrie's valuable monograph on Tara Hill (*Trans. Roy. Ir. Academy*, vol. 18, p. 162), where he endeavours to prove it to be the Lia-Fail. In this instance, however, he has greatly erred. He has not brought forward a shadow of reliable evidence to support his theory; while the tradition of the locality, the form of the stone, the name by which it is known, and the original position in which it was fixed, are all substantial and positive evidence against its being the Lia-Fail, which, from the nature of its uses, its description in ancient MSS., and the form of other known examples, must have been a flat flag-stone upon which the monarch stood, and not a tall cylindrical pillar with a conical top, such as is the *Bod-Fearghais*.

The ornamental details on lithograph are taken from the *Gentleman's Magazine* for September, 1864, which contains an interesting article on Ardmore.

THE PRINTING ART.

THE Stationers' Company of London are following in the wake of the other ancient guilds of trade. A course of six lectures is announced on "Printing, and the Arts connected therewith." The lecturer will be Mr. Ellis A. Davidson, the compiler of several of Messrs. Cassell's Technical Manuals for the use of workmen connected with the building and cognate branches. We trust that the remainder of the London city companies, which are numerous, will

follow the good suit. Prizes also ought to be offered for specimens of the best printing paper and styles of typography, and also for improvements in the mechanical appliances used in connexion with the stationery and printing art. Dublin also could make a move, if our large firms would give a helping hand; and we think our printers' body, or typographical association, could set the ball a-moving to their own credit and perhaps not remote great profit.

En passant, on the 19th inst. an interesting paper was read at the rooms of the Society of Arts by Mr. J. R. Johnson, on "Some Improvements in the Manufacture of Printing Types." The subject touched upon the invention of machinery for casting types, and explained the working of an ingenious machine in use by the Patent Type-founding Company. A discussion followed by other members connected with the trade, and a hearty vote of thanks was passed to the author of the paper.

THE CORPORATION *versus* THE CHAMBER OF COMMERCE.

THE action of the Corporation in rescinding the resolution of the Council of the 12th ult., whereby five members of the Chamber of Commerce were placed on the Gas Committee, is one of those acts which tends further to increase the disrespect in which our local body is held by large numbers of our citizens. If there be any honour left in our Corporation, and if members who voted for the rescinding of the resolution wished to be considered gentlemen in the true sense, they would have shrunk from the meanness of which they are now guilty. Mr. Vereker spoke in a bombastic style of the rights and privileges of the Corporation. We would be the last to acquiesce in seeing any right filched from our municipal institutions that is worth preserving; but if honour and honesty are to be sacrificed in the conduct of local rule in the persons of its members, the sooner the representation is changed the better will it be for the credit and character of the city. If one were to take any heed of the statements of Mr. Dennehy, none but chartered bodies are entitled to be treated with respect. It matters little whether the Dublin Chamber of Commerce has a charter or not. The Chamber is a long existent body of gentlemen closely connected with the commerce and trading interests of Dublin, and, as such, they occupy a position of influence, and should command respect. But the strangest and most blatant remarks given expression to, and ones entitled to the severest reprehension, were those reported to have been uttered by that most elastic wizard member, whose palace of magic is situated at the foot of the Ultramontane hills. Listen to the following bit of public morality uttered by the great Alderman M'Swiney. It is in perfect keeping with his former politico-religious antics on the boards of the City Hall—"The position of the Corporation is like that of a man who had taken a rash oath. He had sinned in taking it, and he would also sin in keeping it." It is a wonder that Messrs. M'Swiney, Dennehy, or Sir John Gray, and others of the Catholic and Protestant supporters and spokesmen of the Catholic University say a word in favour of that institution, for, like the Chamber of Commerce, the University in Stephen's-green has yet no charter. Will they repudiate their advocacy in future, and shake the dust off their feet in respect to other unchartered bodies? Those who live in glass houses should never throw stones. The action of the Chamber of Commerce in opposing the Gas Bill in its present shape is proper and just, and should be supported as well as commended. It would be perfect madness to entrust to any body the enormous powers sought by the Corporation of Dublin in the Gas Works Bill. Unable to conduct at present the ordinary local rule of the city without plunging its head and heels into debt, they now seek new powers whereby taxation will be increased, and, under the

pretence of benefiting the city, are only paving the way to pensioning and personal aggrandisement of a number of individuals who have never conferred on Dublin a single benefit by their past services.

[We have just learned that a special meeting of the Chamber of Commerce will be held to-morrow to report upon the manner in which the Corporation have treated the representatives of their body with regard to the sale of the Gas Company's property to the Corporation.]

THE DUBLIN INDUSTRIAL EXHIBITION.

Active preparations are proceeding to render this year's exhibition worthy of public support. Meetings have been held of the Committee for Ornamental Art, and it is reported that numerous communications were received offering loans of china, porcelain, &c. Collectors and owners of plate, jewellery, metal work, miniatures, bronze, enamels, china, porcelain, and other objects of art are solicited by the Committee of the Loan Museum to communicate as soon as possible their intentions respecting their exhibits.

CIVIC LYRICS.—No. XXXIV.

JOHNNY WATERS.

(Air—*Highland Laddie*.)

Where have you been all the week,
Johnny Waters, Johnny Waters?
Dashing off my long critique,
Making squatters, making squatters.

Where have you been yesterday,
Tell us Johnny, tell us Johnny?
Fighting for the "right of way,"
Spending money, spending money.

What about the Gas Works Bill,
Johnny Waters, Johnny Waters?
Standing orders must stand still,
So ought ours, so ought ours.

Who will be Lord Mayor elect,
Tell us Johnny, tell us Johnny?
Wise and prudent and circumspect,
One with money, one with money.

What about the Scavage-tram,
Johnny Waters, Johnny Waters?
"As you were," so there I am;
Ask the authors, ask the authors.

How proceeds the People's Park,
Tell us Johnny, tell us Johnny?
The Council soon will sod a lark
With more money, with more money.

What if Dublin stood erect,
Johnny Waters, Johnny Waters?
Weight the millstone round her neck,
Sons and daughters, sons and daughters.

Harsh indeed would be that plan,
Art-full Johnny, art-full Johnny.
Works must end as they began;
Drones need honey, drones need honey.

If the Chairman lost his chair,
Johnny Waters, Johnny Waters?
Interest he would find elsewhere,
Captain Slaughters, Captain Slaughters.

You have shown surprising tact,
Clever Johnny, clever Johnny.
Yes, my Self-Improvement Act
Means more money, means more money.

When will you let go your hold,
Johnny Waters, Johnny Waters?
When all the city farms are sold
To the squatters, to the squatters!

CIVIC.

MAGDALENE'S STEEPLE, DROGHEDA.

WE are glad to see that some attention has at last been manifested towards preserving the remarkable old structure known as Magdalene's Steeple, Drogheda, which has nobly buffeted the storms of centuries, and escaped vandal and ruthless hands several times. A description of this interesting ruin, with an accompanying illustration, may be seen in one of the early volumes of the *Dublin Penny Journal*, from the pen and pencil of Robert Armstrong, elsewhere alluded to.

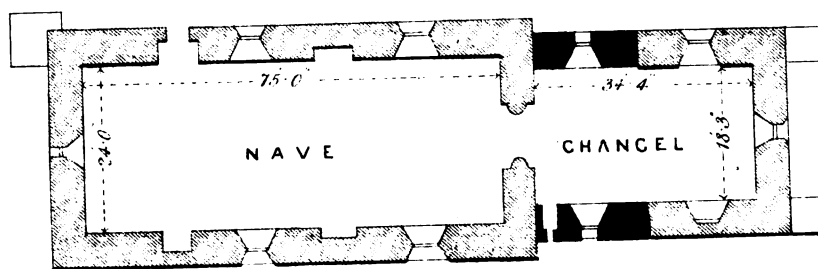
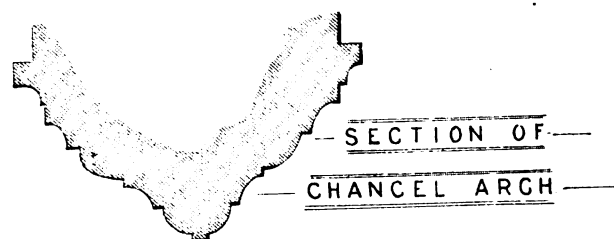
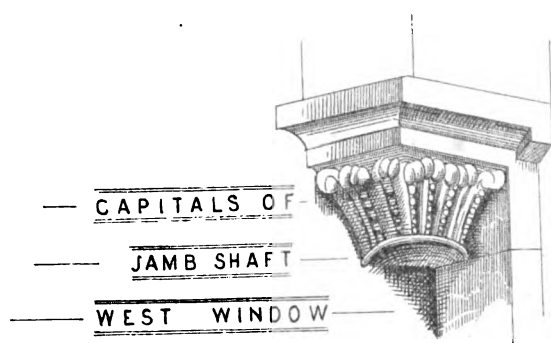
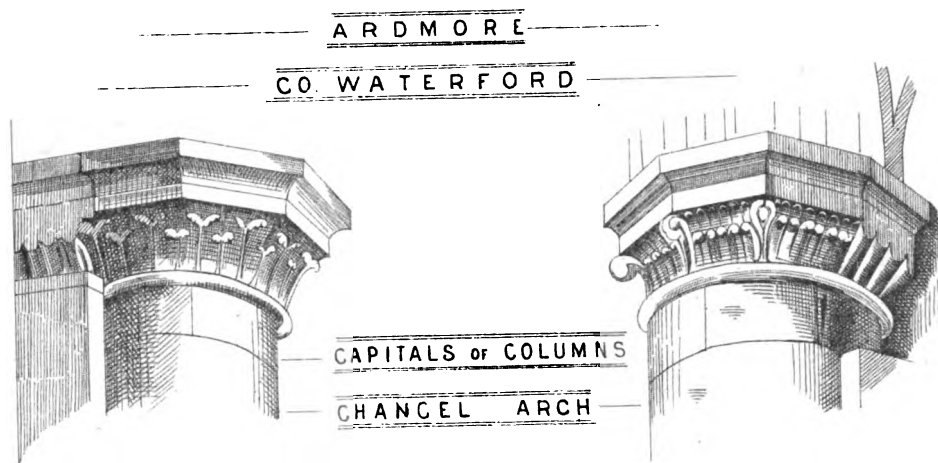
A report was brought up at the last meeting of the Drogheda Corporation, signed on behalf of the committee by Mr. George Butterly, the chairman, giving an account of the visit of the committee which inspected the ruins, accompanied by Mr. Greene, the Borough Surveyor. The report says: "Its majestic remains certainly deserve attention from the Corporation. With a view to preserve the same from further decay, we would recommend that a proper entrance gate be made thereunto, having a gate or door with a lock, the key to be kept in the court-house." The committee afterwards visited the ruins of the Augustinian priory steeple, commonly called the "Old Abbey." In respect to these ruins the committee recommend that the engineer be empowered to take the necessary steps to their preservation, the cost of which, it is stated, would not amount to more than £10, and add that they have "no hesitation in stating that both of these ancient structures are indisputably the property of the Corporation" [in trust for the inhabitants]. If the sum of £10 be sufficient to preserve these ruins from further decay, no time should be lost in carrying the recommendation of the committee into effect. Other provincial corporations would do well to act in a similar manner in arresting the rapid decay of many of our ancient national monuments, none of which are unworthy of a people's care.

ZYMOTIC AND PREVENTABLE DISEASES.

DR. GRIMSHAW may be congratulated for his very able and practical lecture on the above subject. He brings forward a large array of stubborn facts which ought to be studied by our local rulers, and remembered by them and the citizens at large, rich and poor. This is not the first time the public are indebted to Dr. Grimshaw for drawing attention to the unhappy condition of this city, the unsanitary state of which reflects a stigma upon its local rulers. We have ourselves persistently for some years dinned the neglected condition of the city into the ears of the citizens and the civic rulers. We fear we will have to preach and point out again and again the dangers by which we are surrounded, and the accumulated nuisances which encompass us on all sides. While the Corporation exists as a political arena, and is used for the discussion of religious and political nostrums, it is almost impossible to hope that urgent sanitary matters will receive attention.

THE ROYAL HIBERNIAN ACADEMY EXHIBITION.

THE forty-fourth exhibition is now open. We are glad to notice that since the holding of the last one some alterations have been made in the rooms. The small sculpture-room has been partitioned off for the use of students, and a new roof has been put over the large room, by which the light is more powerful and better diffused than before. Before proceeding to criticise the paintings we may remark that it speaks very badly indeed for our architects that they are so sparsely represented in this exhibition. We have had on several occasions to complain of the apathy and indifference that seem to have fallen like a cloud over our metropolitan brethren, many of whom have now for some months held aloof whilst a few energetic young men are endeavouring to remove what has been for the past ten years a standing reproach to our Dublin architects—viz., that they had no professional society, the Institute being, to all intents and purposes, apparently dead. Architects should vie with each other in sending in representations of the works designed by them during the year, as in the Royal Academy, London, where the leading architects of Great Britain consider it a privilege to be represented. This remissness is the more to be condemned when it is remembered that the Royal Hibernian Aca-



PLAN OF CATHEDRAL

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demy was founded by, and owes its present building in Abbey-street to, the generosity of Mr. Francis Johnston, architect, who was the first to occupy the presidential chair.

Only eleven architects put in an appearance in this exhibition, and three of this number exhibit easel pictures, but no architectural subjects. Commencing with those, Mr. J. E. Rogers exhibits a couple of paintings in that peculiar class of subject in which he excels. (179) "Pipen Hill," is in illustration of the nursery rhyme—

"As I was going up Pipen Hill,
Pipen Hill was dirty;
There I met a pretty maid
And she dropped me a curtsy.
Little maid, pretty maid,
Blessings light upon you,
If I had half-a-crown a-day
I'd spend it all upon you."

The picture represents a maiden in mediæval garb tripping down the hill, whilst a young gallant is advancing to meet her. The colouring is very effective, and the city in the distance forms a good background.

Mr. Rogers' "Little Miss Lily" (260) is a water-colour in the same style. Little Miss Lily kneeling in the right foreground, with a feudal castle in the distance. The piece, simple as it is, tells its story well. The grey towers of the castle stand out from the sky, in which the sun is setting. Mr. Rogers is to be congratulated on his happy rendering of the customs and costumes of the middle ages, in which he has few equals. Mr. T. N. Deane, R.H.A., exhibits (858) "Rue de St. Pierre, Caen," with a couple of small mountain sketches (854 and 261). No. 11, "Greek Church, Wiesbaden," by Mr. C. J. Allen, another architect, is a small oil-painting of a church with an ogee dome and somewhat eastern details. We could not closely examine the details, the painting being hung very high. We have reason to complain of the injudicious placing of some of the pictures, the post of honour being invariably occupied by the R.H.A.'s, although some of their drawings would look far better if viewed from a distance. We regret that such is the case, as it will probably have the effect of deterring others who may be outside the charmed circle from sending in drawings that will either be skied or literally placed under foot. We do not make these remarks through any ill feeling, as we are quite aware that the "Hanging Committee" had no easy task, and with few exceptions they discharged it well, and we have no doubt, to the satisfaction of the majority of the exhibitors.

Coming to the architectural designs proper, Mr. W. H. Lynn, R.H.A., exhibits "Guildhall and Courts" (816) which is a beautiful drawing of a very good design. The general outline of one elevation with its central tower reminds us much of the Chester Town Hall, designed by the same architect. It is a very well-balanced composition. The colouring is very good; indeed, we consider it the best architectural drawing in the room. Mr. James H. Owen exhibits (818) a "Police Barrack" in a very pretty water-colour drawing. If Mr. Owen supplies all the police stations with such barracks, a policeman's life must be by no means an unenviable one. To look at this picture one would think it was, to judge from the loop holes, the residence of a gentleman with, perhaps, somewhat warlike taste. Mr. Thomas Drew, R.H.A., exhibits an exterior and interior (819 and 822), sketches for additions to St. Luke's Church, Cork, in pen-and-ink on tinted paper. There is nothing very striking in the design, with the exception of the octagonal bell-tower, which would form a very pretty feature. A "Design for a Church" (817), by Mr. John L. Robinson, shows two views of an apparently large church with a central tower. The drawings are made in brown ink, and are very well drawn. The style of the church is very simple and dignified, and groups remarkably well. The same gentleman exhibits (825) "Design for a Town Hall," a pen-and-ink sketch, with a row of Gothic shops in the foreground, which are very well treated. A "Design for an Altar in St. Peter's Church, Phibsborough"

(811) by Mr. J. Stirling Butler, R.H.A., is a pen-and-ink drawing that has nothing in it specially commendable. The same may be said of the other drawings exhibited by the same gentleman, Nos. 820, 821, and 824. The "Ruins of Wenlock Abbey, Shropshire," (827), by Mr. E. Trevor Owen, is a water-colour drawing, done apparently mostly in body colour. The setting sun behind the grey abbey walls serves to impart to it a great deal of brilliancy. The "South Elevation of the Church of St. Michael, Kingstown" (828), by Mr. J. J. McCarthy, R.H.A., is sadly marred by the tower. The nave is very good, without any special feature of interest. The want of scale in the tower, and the gigantic window in the transept, take very much from a design that would, in other respects, be passable.

Mr. W. Sterling exhibits (828) "Design for a Presbyterian Church, Belfast," that calls for no special comment from us. On the whole, the architectural portion of the exhibition is, we regret to say, very poor. We may in next number make a few remarks on the easel pictures exhibited, some of which are of great excellence.

CORRESPONDENCE.

"DAMP IN A SEASIDE HOUSE."

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Your correspondent M. M. in your last issue, having consulted "several local authorities in the building line," and without effect, it is with some hesitation I venture to offer an opinion (at your invitation) on the matter.

From M. M.'s statement it appears that *only* the *outer walls* of his house show damp discolorations; the inference therefore is, that the inner or partition walls are dry. These damp discolorations, in my mind, arise either from the outer structure being built of limestone, or that the masonry was executed with sea sand in the mortar (a probable reason to assign for a house built on or near the sea shore), or it may be a combination of limestone and sea-sand mortar. I cannot otherwise account for the inner walls being dry and the outer ones showing damp.

I had recently to re-paper a house for a gentleman, and, upon proceeding to remove the old paper, found that inside the outer walls were timber frames of $\frac{1}{2}$ in., and these frames canvassed and papered over. Upon further examination it was ascertained the exterior walls were of limestone, and in this instance so great an influence had the dampness or sweating of the stone on the framing and canvas, that both the one and the other were completely rotten. This I attribute to the fact of the framing being placed in contact with the outer wall, and, by consequence, the damp either from the sweating limestone or the sea-sand mortar, or both.

The only remedy, in my mind, for the case in question is to stud the outer walls, keeping the studding clear of the masonry, and then lathing and plastering the same. In doing this care should be taken to leave space in the cornice (say over the windows and, if practicable, in the skirting) so as to allow a current of air to pass between the studding and the masonry, thus avoiding the possibility of the studs rotting, or, what would be equally undesirable, a damp or musty smell through the rooms. The only objection to studding would seem to me to be the necessity there would be of running new cornices along those walls where studding would be used; but where so much good might possibly be effected, the item of additional expense ought not to interfere.

Lining the walls with brick built in cement is another method; but, not being a builder, I do not feel myself competent to speak with any authority as to that method; nor, indeed, would I venture an opinion at all on the matter but for your invitation of opinions, as I stated in the beginning of this note.—I am, &c. GEO. B. STAR.

27 Lower Ormond-quay.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have read your correspondent M. M.'s letter on the above subject, and believe the damp arises from the saline properties contained in the sand of the mortar and plaster of the house, and no doubt the foundation also is dug in sea-sand.

The only effectual remedy I have found for this kind of dampness is a petrifying liquid sold by the Silicate Paint Company of Liverpool, from a very curious species of silica got from the basin of an extinct volcano, it is said, and from which they also

manufacture beautiful glossy enamel-like paints, instead of using lead.

This petrifying liquid is very cheap; it cost me, I think, about 3d. per square yard to cure my houses, and it has effectually done its work. It goes into the pores of the plaster, brick, or stone, &c., and there petrifies and seals up those pores. My attention was directed to it some eighteen months back by an article I read in a London paper.

If the cellars are very damp, or the gable end of the house, your correspondent had better use Griffith's Enamelling Waterproof Paint made for the purpose. I believe the Liverpool Silicate Paint Company supply this also, at least they obtained it for me, and I think they now manufacture it.—Yours, AN ESTATE AGENT.

[We give insertion to the letters of Mr. G. B. Star and "An Estate Agent" with great pleasure. The subject discussed is one of old standing, and is common to houses inland as well as by the seaside. Damp can without doubt be attributed to more than one cause, but its action varies much in different situations—atmosphere, soil, and materials contributing betimes each their quota. Many remedies have been suggested in professional journals for several years past; some partially successful, but none generally so. Prizes for the prevention of damp in dwellings and for counteracting the spread of dry-rot in wainscoting, floors, and roofs, were offered by the Society of Arts as far back as 1780-90, but though thanks, certificates, and medals have been awarded to individuals at different times since, yet, the subject of damp and dry-rot in houses and buildings is still as attractive a theme as ever. As we are more interested in the opinions held on the remedies proposed by others, when practical, though merely ventilating our own, we will hold over our own experiences of dry-rot and damp in seaside and other houses, until other correspondents have given us their views and experiences on the matter. Some practical good may result from a further ventilation of this important subject.—ED. I. B.]

BUILDERS' PRICE BOOK.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Being a subscriber to your valuable paper, I take the liberty to ask you a few questions, which, if you answer, you will oblige me very much—1st. Is there a builders' price book in Dublin, printed especially for Dublin builders? 2nd. If there is, where is it to be got, and what is the price? 3rd. If not, is it likely that one may be published?—Your obedient servant,

H. J. M.

P.S.—There are many builders' price books in Dublin, but are all English prices, and, therefore, do not agree with Dublin prices.

[There is no Irish builders' price book at present in print, nor has there been, to our knowledge, for many years. There is a likelihood of one being published. If a number of respectable architects and builders would put down their names as subscribers, we dare say with that provision and with the ordinary sale the success of the publication would be assured. Spirited and speculating publishers do not exist in our midst like in London, and our publishers in Dublin will risk nothing. The want of an Irish builders' price book is one of the wants of our time.—ED. I. B.]

ARCHITECTS' FEES.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I beg to request your reply to the three following queries in your next publication:—What is the usual fee or percentage of an architect for preparing a plan and specification, &c., for a building, and what are his duties during the progress of the works? Is he entitled to payment for his visits to the work whilst the plan is being carried out? Is he entitled to additional payment for making a survey and map of the site or of the land to be enclosed?—Yours truly,

A SUBSCRIBER.

[The usual fee for all works over £500 in amount is 5 per cent. on the outlay. The architect is bound to see his plans carried out by the builder; such superintendence is included in the 5 per cent. Travelling expenses and any trouble incurred in making plan of site, &c., are charged extra.—ED. I. B.]

THE COAL FAMINE—AND COAL-GETTING MACHINERY.

THE present scarcity of the coal supply, almost amounting to a famine—to the grievous hardship of the poor and injury of the capitalist, by retarding many industries—has begun to excite serious attention. The miners' strikes in England and Wales are not the only cause of the scarcity; and the coal-masters themselves are partly to blame by their action, which almost amounts to a confederacy in restraint of trade. We may punish gas-stokers and other workmen for an illegal exercise of their privileges, but by doing so we will not mend matters. If the Government inquiry, which we hear is being instituted in regard to the state of our coal supply, is carried out faithfully, we have little doubt but some of our coal-masters will not escape from censure. In one week in London, in the beginning of this year, the best coal raised 8s. in one bound in the ton. This state of affairs is truly provocative of the introduction of coal-getting machinery, and we see that such is the case. Machinery has already been applied in Scotland to the raising of coal, and Messrs. Miller and Anderson, of Coatbridge Foundry Works, near Glasgow, have already, and are at present executing orders for coal-getting machines. Here is a description of the latest improved specimen of these machines, as described by the manufacturers:—

"The coal-cutting machine referred to is a most compact and substantial affair, the working parts of Bessemer steel and cast malleable iron. It runs upon rails, and has a jib which distends the chain on which cutters are fixed, projected from the one side. It cuts 2 ft. 9 in. deep, or 3 ft. if required, and its usual length of cut along the face is 75 ft. per night of eight hours. The get of coal from such a shift's work of the machine is about 80 tons. The machine requires the attendance of three men. The dross is reduced to a minimum, averaging only 4 per cent. against 12 per cent. by hand labour, and the coals secure a higher price, as they are very much rounder and cleaner. The exhaust air from the machine also keeps the mine cool and excellently ventilated. By its means, too, the miner is entirely got rid of. The machine does not require a skilled hand, and the coals, after they are cut by the machine and have fallen down by the top pressure, can be drawn to the pit mouth by the usual pit labourers, so that the occupation of the skilled artisan is likely to 'depart and never to return.' Again, owing to the smaller number of men required in the pit, more particularly during the getting of the coal—the dangerous time—the large and lamentable pit massacres are likely to be extremely curtailed, and pit accidents will be largely shorn of such appalling consequences as large bodies of men shut up in pits and smothered with choke-damp, or drowned by the inrush of water."

Now, if the coal-getting machinery fulfils the conditions requisite, we may look for a cheapening of coal, in a short time, down to its normal standard. We may in conjunction, however, expect another evil by the throwing out of employment thousands of colliers and miners, who will have to betake themselves to other forms of labour; and failing to emigrate, pauperism will otherwise take place, and a state of things will occur, possibly like what occurred many years since on the first general introduction of steam-power, when many trades depending on manual labour were destroyed, or rendered entirely unremunerative to those who followed them.

If improved air-compressing machinery can be applied to coal-getting, it can also be applied to iron-stone-getting, and this will be another revolution.

In their last report, the directors of the Great Southern and Western Railway of Ireland say in relation to substituting peat for coal:—

"As the cost of fuel is only second in importance to the cost of food, we consider this an exceedingly favourable time to test the value of peat, and we shall be happy to give every facility in our power to promote any experimental efforts which may be made along our line of railway to make such fuel available for locomotive or other purposes. At the suggestion of Alderman Purdon, our locomotive engineer, Mr. Alexander MacDonnell, and other gentlemen lately visited some of the principal works

in Germany for the manufacture of peat. Mr. MacDonnell is of opinion that this company would be warranted in spending a few hundred pounds in testing the value of this article, as we have a small portion of bog applicable to the purpose."

The cost of coal, if it continued to rise in price, would, of course, necessitate the railway lines in raising their fares. We hope that they will not resort to this expedient to cover their alleged loss in working their lines through the high price of coal. By all means let our Irish lines try first what can be done in utilizing our large peat resources.

Peat can be used for locomotive purposes, and in the manufacture of iron and other articles. It has been tried already to a limited extent, and was found to answer. Steam-boats on the Shannon were worked by the aid of peat instead of coal. The great supply of coal some years since, and its cheapness, led to its continuance. In 1851, we believe, coal in any quantity could be purchased in London at 12s. 6d. a ton; but lately the best coal in London was upwards of four times that amount.

If the dearthness of English coal leads to the developing of our Irish coal and peat deposits, we may forget in time our present severe hardships, and rejoice that "it is an ill wind that blows nobody good."

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

PONS ASINORUM.

THE surrounding immediate locality of the Pons Asinorum of the Irish Capital is probably the most historic quarter of any rendered memorable in our midst by olden names, residences, and associations. Other hands have compiled and collected the vestiges out and about the devious approaches to our Pons Asinorum; but the memories of the nineteenth century remain untouched. Though not as rich in literary reminiscences as it was in preceding centuries, still the Asses' Bridge of the present century can furnish a rare catalogue of glories, follies, grievances, and vicissitudes connected with public movements and public men. Our own recollection dates back many years, to the days when nankeen trousers and "straights" were in fashion. It was economical and wise to wear straight shoes, which went out of repair with a mutual affection, and could be re-soled with the same unanimity in their understanding. In crossing the Pons Asinorum last week, the name of Lumly Lott caught our eyes, and it instantly brought back a freshet of olden memories, redolent of the City Wards and the Blind Quay; of wards, too, that were picked and afterwards pickled with pernicious principles, and keys that produced many an open sesame that worked ruin to many a high instinct and noble interest, by which our city was of erst benefited.

Our Cicerone comes in the nick of time to cut short our tale, and as his memory dates back far beyond our spoon-feeding days, we will let him unbosom himself a little.

"Just where we now stand, at the angle of the Pons Asinorum, a group of houses formerly stood; but, at the close of the last century, they were removed to afford a better approach both to the bridge and to Legislature-street. I could never rightly understand, sir, why this thoroughfare, from its intersection here to its intersection by the line of quay, should be still called Pons Asinorum, being in reality a short street in itself, instead of any portion a bridge, save the approaches to the bridge. Strange things do happen, however, in street nomenclature; but as regards this spot there are few quarters, indeed, that could show so many transformations. Of all the dwellings in this locality, I think the business of Lumly Lott is the oldest. The founder of his family lived, in my grandfather's time, on the Blind Quay, at the sign of the Negro's Head, and

the people from far and near used to flock to Lumly's shop for his celebrated pigtail, which was not like the rotten stuff of these days, but was so strong that the porters could use it as a packing-cord, or the highwaymen as a noose. We have mixtures, sir, in these days, like the pills and decoctions of quacks, with high-flown, mock classic, and endless names; but one never hears now of fine old titles of Bergamot, Strasburgh, Brazil, Spanish, St. Vincent, Irish Rappees, or 'the Superfine Pigtail for Ladies.' Our snuffing and smoking mixtures are nearly all the re-tailed articles of other re-tailers, who have left off cutting one weed to doctor many. Lumly Lott won gold and wears it on his crest, and it would be a consolation in these degenerate days if these who follow his trade would imitate the example of the great original.

In that print shop, sir, right opposite, in my early days, lived a wayward genius, Gulielmus Josephus Slattery, who wrote, compiled, and published various works. He was a kind of politico-religious character, and, having dealings with clerics and laymen, he found himself often between two fires. Being of an enthusiastic temperament, Slattery gave vent betimes to strong political opinions, which did not always square with the views of his clerical patrons; and he unfortunately gave too much of his time to politics and too little to his business, which eventually came to grief. Slattery, like the Wilsons and the Watsons of the last century, compiled a very useful directory, which proved very serviceable to a certain class; but through his misfortune the copyright passed out of his hands. He also wrote the 'Repealer's Catechism,' a work which gave very sharp answers to very sharp questions of national political interest. Poor Slattery's skirts were caught by the winds of depressed public credit and adversity, and after buffeting a long time unavailingly, the storm swept him adrift; but his house still remains, as you may see, yonder in the Pons Asinorum.

"Exactly opposite to Slattery's publishing concern the famous Timothy Rooney established 'The Primal Board of Native Fabrics and Neglected Industries.' Tim Rooney, sir, was a *rara avis* in his way, or, I may say, his many ways, for his versatile brain was always brooding and hatching new projects for his country's good in general, and his own in particular. Tim was originally a member of the Ancient Guild of Bakers, and kneaded and sold hot cross-buns, muffins, and bread free of alum in Frank-street. His soul, however, spurned the prosy ways of bread-baking, so, shaking his country's dust from off his feet, he set sail for the New World. After nine years' residence in the Western Hemisphere as a missionary vindicator of his country's honour, with varying success, Tim sailed back to his native city, and was fêted as a returned exile. Once more he took to the revivification of buried industries, and by the force of great natural abilities, of which persuasion was a strong element, he gathered around him a congenial staff of disciples, who worked well in harness so long as their services were remunerated. Tim Rooney's programme for the regeneration of Ireland was a remarkable document. He proposed to establish national banks, industrial schools, self-supporting poor-houses, small partnerships, technical colleges for workmen, reformatories, revive the olden trade on the Liberties and the Coombe, and set five thousand looms once more whirling in the deserted streets of the capital, where grass had begun to grow between the joints of the city's tiles and pavements. After carrying out a portion of his programme with enthusiastic citizens' capital, Tim found that the mule would no longer work without hay, and that he could make no more bricks without straw. One fine summer morning Tim disappeared from his accustomed arm-chair at the Pons Asinorum, passed across the channel, and booked by ocean train to the Antipodes. Knocking about through the Australian cities for some months, his restless spirit, which never could be 'cribbed,

cabined, or confined,' burst through its bonds. Without bidding adieu to his Antipodean friends, with one or two exceptions, Tim steered his way to Sacramento on the Pacific Coast. Landing first at New York, Tim lectured, and acted, and danced his way through the States, one after another. He appeared on so many stages on his way, that his journey was performed by slow stages. Tim was equal to every call upon him by his exiled countrymen. If he gave a lecture on Irish music, he accompanied it by illustrations on the fiddle and on the feet. Jig, reel, planxty, or hornpipe was given and encored; testimonials voted to the 'Wandering Celt,' and an odd presentation watch and purse. After a journey of several months' duration, Tim at last reached the Sacramento Valley, and was hailed with acclamation. When he recruited his health, and looked about him for a few weeks, Tim announced his intention of starting a newspaper. In due time, 'Rooney's Irish Comet' blazed out in the firmament on the Pacific Coast, and became the exile's organ, and recorded with marvellous powers the interminable eruptions and gunpowder explosions that were taking place at home in the Sainted Isle. The 'Comet' blazed away for months like a barrel of petroleum, and dried up all the enthusiasm of its supporters; so Tim had to make another trip back to his native Isle. It is now many years, sir, since I saw him, after his return from his second exile, which embraced a period of twenty years, and he looked as young as he did the morning before he levanted from the foot of the Pons Asinorum. On the latest revisit he made to his native city his countrymen did not receive him with open arms, which Tim thought a very ungrateful act on their part. The last sight, sir, I saw of Tim Rooney was during a visit I made to London pending a great parliamentary crisis. The wonderful propagandist had opened offices and founded a club in London for the purpose of adding another comet to the solar system, whereby his deeply-loving and believing countrymen would be lighted home to their weeping motherland with all their hopes realised.

"Tim, as I have already said, was a *rara avis*, with nine lives, like a cat. You could not put down the man, silence him, choke him, nor drown him. Cut him into several halves like an eel, every half would wriggle and unite again; bring him out to sea or drop him from a balloon, and he was sure to fall somewhere unhurt; and if he was drifted on a lone rock in the midst of the Atlantic, like a barnacle, Tim would attach himself to it, stick to it, and draw sustenance from what others would draw death. Tim compiled a history of the Irish Israelites once, from the days of Milesius down to the Exodus. This was an extraordinary volume of fact and fiction. If the ghosts of our departed historians and journalists were to come back to life again and witness the way their literary property was utilised in Tim's volume, I am sure they would not bless him. I cannot tell you, sir, when Tim Rooney died; no obituary of him ever appeared, to my knowledge. He is one of those strange natures that appear once in every century or two. Like Rip Van Winkle, he appears to go asleep for a few years, but reappears again. I am inclined to believe sometimes that his body has been passed through some machine like that represented at Harold's Cross for grinding young. If the world finds out some day that Tim Rooney is actually a dead man, it will be considerably astonished.

"From the point of the Pons Asinorum to the head of Legislature-street no buildings have been erected for the last half-century, with the exception of one or two here and there that were burned down. Why this spot should be called the 'Asses' Bridge' I cannot well explain, except on the supposition it was intended to reflect upon our local rulers, whose head quarters are in clear view of the causeway across which many of the members passed direct to their meetings. The Pons Asinorum, it is reported, will soon undergo another transformation under what is called

the levelling-down process. This change, it is said, will work a great benefit to the mules and horses, as well as to asses of every order of intellect and locomotion. One or two of the piers of the Pons Asinorum are built on a rock which runs obliquely across the bed of the river, and the others are laid on piles surmounted by a framework of heavy timber with a great body of stones run-in with molten grout. Though asses in thousands, sir, have crossed and re-crossed the Pons Asinorum in my time and that of my grandfather, it was, I assure you, no ass who designed it, but a skilful and painstaking architect."

The rain having begun to fall, the narrative of the "Oldest Inhabitant" was reluctantly cut short, and a reciprocal "good bye" ended our visit for the day.

THE GEOGRAPHY OF ARCHITECTURE.*

PREVIOUS to the reading of his paper, Mr. MacManus made some remarks descriptive of various diagrams which were hung on the wall of the room. The following is an abridgment of what he said:—

When Master of the School of Design it occurred to me that in order to abridge the studies of gentlemen who were occupied during the day I might treat the subject of architecture in such a way as to fix the various styles on the mind of the student. I made diagrams of the characteristic features of each style. I also got a Mercator's projection of the Old World, and on it have tinted with different colours the countries where the influence of the various styles of architecture extended. I have used red for Roman architecture, and you will see that the Roman influence extended to Africa and Alexandria in the South, and Palestine and Baalbec and Palmyra in the East, where are to be found the remains of exquisitely beautiful temples—which proves that the Roman influence was very widespread indeed. Debased Roman extended pretty much north, and is to be found in Spain. The purple represents Egyptian architecture; it goes along the coast of the Indian Ocean, as we see in the rock-cut temples of Hindostan the Egyptian influence slightly modified. The Greek, which I have tinted yellow, was, as you will perceive, confined to a very small patch indeed. The brown line corresponds with the tower buildings which pervade the whole of Asia, and travels from the east of India across Europe to Portugal, and thence to Ireland, where such monuments abound. This other diagram shows how a heap of stones used to commemorate some event, as in the time of the Patriarchs, has come down to the present day. The people now make a heap of stones where a murder has been committed, each wayfarer being bound to throw a stone on it to increase the heap. The blue strokes represent Gothic, which is to be seen most in England and France; very little of it is seen in Italy.

I also think that styles of architecture were mainly influenced by the materials at hand; for instance, the Greeks and Egyptians used stone and the Indians wood, which they have copied in their light pillars, and tracery and brackets. I think that the hardness of Egyptian granite suggested the massive treatment of Egyptian architecture. Persia and Asia were at one period thickly studded with forests, and the timber construction is now to be seen copied in stone. Were I an architect I would note down the several localities where different materials abound, and design to suit those materials. Mr. Wilkinson, when architect to the Poor Law Commissioners, wrote to the various clerks of works who were carrying out poor-houses under him, asking them to fill up a paper describing the different building materials of the locality; he then put them together, and so compiled one of the most use-

ful books we have, and one which no architect should be without.

I will now proceed to read my paper. I need scarcely say that I do not copy anything without acknowledgment:—

The conception of the general term "Fine Arts" is confined to the specialities, Painting, Sculpture, and Architecture; and I purpose this evening to draw your attention to the consideration of the circumstances by which they are influenced in this country.

Painting is the art of using material colour on a smooth surface so as to exhibit *form* and *space* agreeable to our ideas, sentiments, notions, &c.

Sculpture, in its high legitimate walk, confines itself to *character* through material form.

Architecture is the poetic expression of use in construction. These are the abstract ideas of the formative arts entertained by all who legitimately practise them. They are however, affected by local circumstances: we have the same colour in the light, the same natural forms and the same materials on the earth; but these vary according to the situation, hence the necessity for a local modification in the application of colour, form, and materials. So that however well-intended the importation of works of art from other countries may be, except to encourage to emulation, they only represent the taste of a different people, and are generally placed in galleries or museums to exhibit the sort of civilization or the amount of spirituality of the respective nations to which they belong. This clearly implies a nationality in art as in polity.

The moral impression made on a people dwelling in the heart of a vast continent where content and security reign, must naturally differ from that which is experienced by those living on the frontier where suspicion and jealousy predominate; and a still greater difference must exist in the impressions made upon the natives on the sea-coast, where all that concerns the *great deep* is mixed up with their conceptions. There are also corners and bye-paths off the great road of life where a dull civilization stagnates or is frozen in its primitive prejudices. From this point of view we see at once the matters at issue among writers of the past century, namely, whether *climate* influenced genius in the fine arts—one set of writers contending that Great Britain, from her frigid and humid atmosphere, might attempt high art in vain—that genius found a home only in sunny latitudes; but their patriotic opponents maintained that genius was independent of climate, and pointed to Reynolds, Flaxman, Inigo Jones, &c. In the midst of these conflicting opinions the Royal Academy in 1769 sanctioned the practical and commonsense view of training students as recommended by their first president, and the success of that body during the last hundred years has proved this to be sound, so far as it goes. The words of Sir Joshua were these:—"I would chiefly recommend that implicit obedience to the rules of art, as established by the practice of the great masters, should be exacted from the young students; that those models which have passed through the approbation of ages, should be considered by them as perfect and infallible guides—as subjects for their imitation, not their criticism." This vantage ground was at all events secure and by far safer than the unstable flights of unfettered talent. On the whole of the western coast of Europe we find the Celtic race stereotyped in strongly-marked characters from the earliest authentic records to the present time, giving a tone to the soil to which they are attached, and a passive resistance to the advances of more active and restless nationalities; with an unchangeable belief in the antiquity of their race they remain content in their local circumstances, refusing to be conquered and resisting conquest! "Thou seest this poor people," said a Welsh mountaineer to the proud king of England, who was looking contemptuously at the homely attire of his countrymen,—

* Paper read by Henry MacManus, Esq., R.H.A., at meeting of Architectural Association of Ireland, March 27th, 1872.

"such as they are, thou never shall subdue them; that is reserved alone for God in his wrath." Such is the attitude of this brave race—a race that prevails in this island. . . .

Our local exhibitions are open to foreigners for the sale of their works, thus sacrificing the native artist to the *idea* of open world-wide competition. It may be said of Ireland (what cannot be said of any other country), namely, that she has no national vice or crime. So much for her special capabilities. We will now see how far these are developed and directed.

The chronic state of unrest which has for so long afflicted Ireland has been unfavorable to the development of her genius in art. When it does appear, it must be "racy of the soil," or it is nothing. We have Irish music and also ornamental art and recognized literature; but we have no Irish painting, sculpture, or architecture beyond what is common to other countries. It must be borne in mind that the art produced in a country is not necessarily the exponent of the hereditary sentiments or feelings of that country. Geographical situation will give a form to usage which, after affecting a few generations, will become fixed in the mind—a sort of second nature. We are more the creatures of circumstance than we care to acknowledge. It is useless to attempt to change these habits without first changing the circumstances which created them. The desire to act contrary to reason and common sense always results in evil, the least of its mischievous consequences being to place us in that anomalous state known as "a false position," the vagaries of which we of Ireland have enjoyed for centuries!

The fifteenth century is remarkable as the period of the revival in Europe of art, literature, and liberty. Italy and Germany were amongst the first to embrace these agents of civilization. France and England imported artists, whilst in Ireland no art appeared; the people, being thrown on their vital instincts, had little left but the bare life to guard. We therefore have no art that we can fairly claim as national, nor indeed fine art of any kind, until the early part of the last century, when patriotism, following in the wake of Swift, founded in this city an institution which was to become a parent to the arts and manufactures of a new-born nation. This truly national institution was established and worked by a resident gentry, patronised by the nobility, and had an annual grant of £500 from our own Parliament, which even lent its rooms in College-green for the exhibition of the works of the students. Together with a local legislature we had a resident gentry and nobility, who vigorously set to work to construct a nation; and in spite of the quarrels of the Government about the disposal of revenues, the country progressed as never nation did before, and continued to do so till the end of the century. Before this time a drawing school had been established in Paris, chiefly with the view of promoting local manufactures. The fine arts in France at this time were degraded to the lowest standard possible. Vanloo was the court painter, and amongst his scholars was a Mr. West, from Waterford. These artists were the most accomplished figure-draughtsmen of their day, and the figures of West and of Vanloo were the staple examples of conventional figure down till about twenty years ago, or for 140 years. On the return of Mr. West to Ireland he set up a drawing school in George's-lane. About that time (1781) the Dublin Society, of which I have already spoken, was founded, and similar societies were established, one in London—namely, the Society of Arts—and one in Scotland, the Board of Trustees. These three societies arose when the war with France was at an end and the disturbing element of Jacobitism allayed.

During the middle and latter part of the past century it was the fashion for the nobility and gentry of these islands to make the grand tour of continental Europe, especially to visit Rome and Paris; in the former city to behold its art-treasures; in the latter, as people

of quality, to catch the tone of fashionable society. From these visits to the French capital at the time of its decline and utter prostration in religion and morals, our fascinated gentry returned with false ideas of art-culture. St. Pierre, in writing of these follies, says:—"We are taught to be well acquainted with books, with pictures, with algebra, with heraldry, but not with men. Connoisseurs are wrapt in admiration at the sight of a Savoyard head painted by Greuze, but the poor Savoyard at the corner of a street walking, talking, and almost frozen to death, is unheeded. That mother with her children around her form a charming group, but the originals are perhaps in some neighbouring garret, without even the means of subsistence." This importation of French taste, at its most degraded and heartless period, unfortunately prevails in this country up till the present time. Confirmatory of this is the purchase, by the Royal Dublin Society, of Grattan's "Blind Beggar-woman and Child," now hanging in the hall of that institution. The same morbid taste has been transmitted to the Irish Art Union, for the encouragement, I suppose, of art (?), as we see by the purchase of the "Blind Girl at the Holy Well," the "Two Young Beggars," by Rothwell, and the "Arran Fisherman's Drowned Child." There is nothing in these expensively-engraved pictures to move us to anything but pity and disappointment. I for one do not wonder that efforts guided with so little true taste belong already to the past, and that they failed to effect anything good or useful.

However, these irreparable errors in our self-constituted committees of *taste* were relieved in some sort by good intentions, and the fact that most of the aristocracy who had travelled returned with statues in marble, metal, or terra-cotta, paintings, and engravings; they also brought books, which have contributed to form an art-library, and among these are many folios on architecture and antiquities.

About the year 1750—the brightest period of our modern history, which dawned like a sudden morning-light after a dark tempestuous night—we are struck with astonishment at the energy employed to cultivate the fine arts in Ireland. A new dynasty was seated on the throne of these realms, and the resident gentry, relying on the Act of Settlement, vied with each other in their efforts to serve their country by promoting its material welfare. Among the nobility the names of Lord Duncannon, the Earl of Lanesborough, the Duke of Leinster, Lord Newtown, Lord Ranelagh, stand foremost. The clergy were the most active in the resuscitation of Ireland—the names of the Rev. Dr. Samuel Madden, Rev. Charles Jones, Rev. Dr. Henry. Dean Maturin, the Bishop of Ossory, Rev. Dr. Barrington, are recorded by their deeds; and private gentlemen, such as William Maple, John Putland, David La Touche, Arthur Pomeroy, Holt Waring, Jones Ford, Dr. Prior, Dr. Weld, Mr. Caldwell, have also distinguished themselves by their patriotic endeavours.

As early as 1788, Dr. Madden, the originator of that art movement in Ireland, in an enlightened address to the nobility and gentry, among other good and cogent reasons for establishing an art institution, gives the following:—"The fine arts have always been considered by all cultivated nations as the greatest ornaments and elegancies of every country, so that the utter neglect of them that prevails in Ireland will ever be a proof against us of barbarism and Gothic ignorance till we shall shake it off." And again:—"When the necessities and conveniences of nature are sufficiently provided for, the art of delight and amusement will constantly come in, and if we don't bring them to us we will be apt to go abroad to them; since we must have luxury we should encourage that kind of it which has the most of pleasure and the least vice in it."

In 1757 my Lord Duncannon writes from the Continent to the Dublin Society:—"The art of designing is of the greatest use not

only in the polite arts but through every manufacture, and this the French have proved since the establishment of their academy by supplying nearly the whole world with their fashions. Had the parliament thought proper to appropriate the absentee pension-tax to this very worthy and great work, it would have done the business completely and much to our honor." Four years later the parliament granted £12,000 for sundry purposes. From that time we find the so-called classic style of architecture making its appearance in this country. The names of the noblemen who introduced good architecture amongst us are: Charlemont, Port-arlington, Powerscourt, Cunningham and Beresford. Through their exertions sprang up, as if by enchantment, those beautiful structures, the pride of our capital and the admiration of all visitors of taste or ordinary intelligence; they are the work of one generation of noble Irishmen. Cassels, Wilkins, Vallancy and Gandon were strangers that were principally engaged in these works, though by that time we had native architects capable of whatever was required of them, and in all directions throughout the country the gentry were building, as if in wholesome rivalry, abbeys and castellated mansions with banqueting halls, turreted towers, barbican gates, court-yards and terraces; these found artists in the Morrisons, Papworth, Baker, Johnston, Murray, and Capability Brown—picturesque dwellings that mark the splendour of a resident nobility, and inspire admiration.

Up till that time there was nothing in the way of architecture that had any recognized existence; there were only the old ruined castles of the Pale, and a few scattered, bald, heavy-roofed, rueful-looking manor-houses with segment-top windows in the lowest Dutch taste staring from the end of a straight avenue of lime-trees. It was here that the descendants of the settlers of Cromwell or William aroused the echoes at early morn—a lusty, hard-drinking, hard-headed race, fond of hunting and good cheer, but, alas! entirely indifferent to the civilizing influence of the arts. Meantime, sculpture was represented in Ireland by two foreigners—Rysbach and Van Nost. The recumbent statue of Dean Drilencourt is of the best class of the day and that of Prior by Van Nost is very respectable. Van Nost was patronised by the Royal Dublin Society, and taught most of the rising sculptors of his day. His works, by the way, have the contorted and fluttering air of Roubilliac and Bernini made utterly grotesque by the minuet attitude of Lucas and other figures of the same kind in our monumental sculpture.

(To be continued.)

STATE EXPENDITURE ON ART AND SCIENCE.

THE following list of Civil Service estimates will show at a glance how this country fares in comparison with the huge grants made for similar objects and institutions in England and Scotland. In the matter of manuscripts and antiquities alone no sums are thought too much betimes to expend when the matter hinges on particularly to the sister kingdom; but here in this island, where every county is almost a mine of antiquities, the sums doled out to institutions devoted to their preservation, or to other important pursuits in the arts and sciences, is miserably and shamefully small. We have even institutions performing a vast amount of useful labour which do not receive one penny from the State. For instance, the Royal Archæological Society of Ireland, which is well deserving of a small annual vote. Although we have no Ephesus on this island, yet there are mounds, burrows, and tumuli which are waiting to be upturned to reveal their treasures; but more priceless still than all these may lie buried under the green sod of this island. We possess hundreds of glorious ruins, gems of ecclesiastical architecture and early arts, magnificently beautiful in their decay. To preserve these we need help. While they

stand yet proudly in their ruin above the surface of the soil let an institution be supported in preserving them. The excavator is not needed to dig them stone by stone out from the bowels of the earth, but to preserve them from falling and being buried in the earth. "Excavations" sound grand when carried out at Nineveh or Ephesus, but excavations in Ireland sounds in the ears of some men at Westminster something like grave-digging. Churchyard excavations in Ireland would, at all events, confirm a historical fact that many of our race in the nineteenth century though buried deep,

"No useless coffin enclosed their breasts."

Parochial estimates included a vote for one or two false-bottom shells, but the boxes went back from the graves empty.

Herewith is the Civil Service Estimates for this year, which show a total for the seven classes of services of £18,419,698, the net increase being £444,625. Of this sum the following items may be considered as referring to Art and Science:—Mr. Herbert's picture, "The Judgment of Daniel," in the Peers' Robing Room, Houses of Parliament, £1,000, a re-vote of a sum not expended—the original estimate for this painting was £4,000; new Home and Colonial Offices, £58,000; Sheriff Court-houses, Scotland, £14,340; National Gallery Enlargement, £42,320; Glasgow University Buildings, £20,000; Industrial Museum, Edinburgh, £9,200; a new wing to Burlington House, £29,192; Post Office and Inland Revenue Buildings, £159,607; British Museum Building, £5,547; Science and Art Department Buildings, £19,773, of which £14,000 is for the new buildings at South Kensington; Wellington Monument, £4,651, for relief for the panels of the walls of the chapel in which the monument is to be placed; Natural History Museum, £80,000; New Courts of Justice, £68,800, of which £65,000 will go towards the erection of the building; public buildings, Ireland, £156,808. The total for Education, Science, and Art is £2,440,442. Of this the Science and Art Department takes £262,503, including for administration, £5,590; for schools, £104,560; for purchases, circulation, &c., £24,287; for the South Kensington Museum, £38,396; Bethnal-green Museum, £5,570; Edinburgh Museum, £7,232; Dublin Society, £2,268; Hibernian Academy, £300; British Museum, £102,061. This expenditure includes £24,840 for purchases and acquisitions, £4,190 for printing catalogues, &c.; £12,490 for salaries and wages. The Department of Manuscripts takes £2,500 for purchases; the Department of Oriental Antiquities, £250, for Egyptian papyri; British and Mediæval Antiquities, £350; Greek and Roman Antiquities (including £3,000 for excavations at Ephesus), £4,500; coins and medals, £1,000; prints and drawings, £2,000. The National Gallery is set down for £6,045, including £2,051 for salaries and wages, £1,994 for police. The National Portrait Gallery demands £2,000, including £866 for salaries and £750 for purchases. The learned societies and scientific investigation, £12,450, of which the Royal Society has £1,000; the Academy of Music, £500, to provide suitable accommodation; the Irish Academy of Music, £150. The National Gallery, Scotland, takes £2,100; the National Gallery, Ireland, £2,880; the Irish Academy, £2,084. The Tower, London, takes £716.

CORK HARBOUR COMMISSIONERS' ENGINEER.

THE resignation of this appointment by Sir John Benson through failing health having been accepted by the Harbour Board, they propose immediately advertising for candidates for the office, at a salary commencing at £400 and rising to £600 per annum. Candidates are not to exceed 45 years of age. When the appointment is made, there are several very important works to be considered, including a new ballast quay, yard, and shops, for the Commissioners at Cork; also new docks and quays at Queenstown.

NOTES FROM THE SOUTH.

IN and about Cork building operations are at present fairly active, with an immediate prospect of much greater activity. The workmen in all branches of the trade are fully employed, which is a very healthy sign at this early time of the year. It is therefore much to be regretted that a steady advance continues to be made in almost every material employed by the builder, more especially in that of timber, which during the week has advanced 12½ per cent., or upwards of 25 per cent. during the last twelve months. As might be expected, owners of house property are increasing their rents from 20 to 30 per cent., and in many cases to 50 per cent. The humbler classes, as is generally the case, are the greatest sufferers. It is gratifying to find that a few gentlemen, animated by truly patriotic and philanthropic motives, have formed themselves into a company to supply in some measure a want long existing in Cork. Ground for 55 cottages has been secured; a sufficient amount of capital has already been subscribed to enable the company to make a beginning, and it is contemplated to commence the work of this number at once, from the design and under the superintendence of Mr. Wm. H. Hill, architect, of Cork. With next issue we hope to give an illustration of these, and a detailed description.

St. Luke's Church, Cork.—The works of enlarging this building have just been commenced, in accordance with the design of Sir John Benson and Mr. W. H. Hill, architect. The style adopted is that of the Romanesque. The cost of the proposed works will be £5,500. At an early period we hope to give an illustration of this building.

Cork Barracks.—Some extensive works are now in progress at these barracks: a gymnasium for the garrison, just commenced by Mr. Richard Evans, contractor, of Cork; and buildings for laundry and offices in connection, some time in progress, for which Mr. Patrick Barry is contractor.

Business Premises.—A large and handsome warehouse and furniture mart has just been completed for Mr. Linehan, in the South Mall, from the designs of Mr. R. R. Brash, architect. Contractor, Mr. Thos. A. Walsh. The mayor, John Daly, Esq., is about to have erected a very extensive warehouse in Great George's-street. It will be a building of considerable architectural pretensions, and will cost from £4,000 to £5,000. Mr. Robert Walker, jun., C.E., is the architect.

The Postmaster-General having purchased the Theatre Royal, the works of the new Post-Office and Telegraph Office will be commenced forthwith by the Board of Public Works, at a cost of about £12,000.

Cork and Passage Railway.—Since the opening of the new line and terminus at Cork of this railway, the company have been making extensive additions to the buildings in the erection of workshops, stores and offices, goods platform, and many other works. These are being carried out by day's work, under the resident engineer and superintendent of the company, Mr. Barber.

Passage West.—A second range of granaries are now in progress of construction at the Docks, under Mr. Craig, the resident engineer. A new Wesleyan church is to be built here at once. Mr. Robert Walker, architect.

Kinsale.—Plans for a Wesleyan church have been prepared by Mr. Robert Walker, architect, and tenders advertised for.

It is stated that very extensive works are contemplated at this station by the War Department during the present year.

Mallow.—A new wing is to be built to the Royal Hotel, for the proprietor, Mr. O'Meara, by Mr. Newstead, builder, Fermoy.

Buttevant.—A gymnasium is in course of erection at the Barracks, for the War Department, at a cost of about £3,000. Mr. Maurice Hennessy, contractor.

Fermoy.—Mr. Charles W. Atkins, of Cork, has been declared contractor for the works to be done in altering and enlarging the Hotel, for which Mr. R. R. Brash, is architect. Amount about £3,000.

Recreation rooms are being erected for the War Department at the Barracks. Mr. Newstead, of this town (who has also a contract with the same department for the erection of a gymnasium at Limerick Barracks), is the contractor.

Queenstown.—A Wesleyan church and manse is in course of erection, from the design of Mr. Wornacott, F.R.I.B.A., at a cost of about £3,000, by Mr. Francis Jackson, of Cork, builder.

THE SOCIETY OF ARTS.

IN the programme of the "Technological Examinations" of the Society of Arts for the year, three prizes will be awarded to the best candidates in sums of £10, £7, and £5. Candidates offering themselves for examination will be tested in their knowledge of general science, technology, and practical knowledge in their respective trades or professions. The arts selected are: cotton manufacture, paper manufacture, silk manufacture, the manufacture of steel-cutting and edge tools, and carriage building. The candidates must show an elementary knowledge of abstract science, the scientific principles of which his art and manufacture is an application, a knowledge of the application of the principles of his trade, and the various processes and manipulations of the factory and workshop.

In the "Premium List" a number of special prizes and general prizes are offered for inventions and improvements in the various arts. For several of these the society's gold medal and £50 will be awarded, and gold and silver medals to those successful in producing moulds for metal-casting (according to the conditions laid down), elastic tubing, rollers for printing, improved chemical balances, incombustible wick, casts (white marble), coal-working machinery, lighting coal mines, tunnelling, freezing machine, etching and ornamenting iron, the application of lithography to block-printing, an improved galvanic element, an electric condenser, sensitive-pocket condenser, a method for preventing the potato disease, the successful introduction of new edible roots, an improved cheap and simple hydraulic machine, producing unsinkable ships, an improved diving apparatus, electric weaving, new gums and oils, an improved means of telegraphy, improvements in the production of coloured silk, a ready means of reproducing designs by artists, as surface blocks, &c.; a method of constructing magazines for storing gunpowder with other explosives, for giving increased security; store-houses on an improved plan for petroleum and other light oils and spirits; for the introduction of peat into commerce as a substitute for coal, and for general uses.

Among the "Special Prizes" are ones for preserved meat; the best method of preventing destructive fires, extinguishing fires, and saving valuable property from the flames and from thieves, or in detecting incendiaries; for the production of inflammable wood, for generating a new power suitable in place of steam, for the production of a new traction engine as a substitute for horse power on tramways or on roads. A medal will be given this year to female artists for the best cameo designs, and executed on any of the shells ordinarily used for that purpose.

Students, artists, workmen, and others, or all those of a truly inventive mind who desire to exercise their talent should procure the programme of the Society of Arts and the "Premium List" for this year, and honestly try if they cannot make the world a little richer by their study and labour.

AFTERNOON LECTURES.

DR. GRIMSHAW ON ZYMOTIC AND PREVENTABLE DISEASES.

THE lecturer observed that the subject of this lecture was so large that he found it would be difficult for him to make it interesting, owing to the close condensation of the vast number of facts, theories, and suggestions that he would be obliged to pass in review in the short time at his disposal. The subject for their consideration on the present occasion did not include all those diseases of the "controllable class," but only such as come under the head of "Zymotics," and which, therefore, were more immediately affected by public measures of prevention by the conditions which affect large communities. By the term preventable disease is meant "any disease which arises or spreads in consequence of the wilful or careless violation of the laws of nature." As to these laws it will be necessary to direct our attention towards some of those which affect health more particularly, and to point out the result of this violation. Some persons conscientiously object to the term "preventable disease," because, as they assert, disease is a direct visitation of God upon his people for his own wise purposes and their benefit. This objection is, however futile, for, if ever direct judgments fall upon mortals for sins committed, there can be no better examples than those derived from the terrible disasters which have so often followed the wilful or careless violation of the sanitary laws of nature; or, as we may call them, the sanitary laws of God. And we have direct proof that plagues are, to a great extent, influenced by sanitary conditions. Thus, smallpox is diminished by vaccination, enteric fever by sweetness of air, typhus by ventilation, erysipelas by cleanliness, metritis or puerperal fever by isolation of mothers, diarrhoea and cholera by the exclusion of sewage from waters in domestic use. The term zymotic is applied to those diseases in which we believe that the pathological process called zymosis (a process somewhat similar to the process of fermentation which occurs outside living bodies) results in the production of that peculiar train of symptoms characteristic of each one of those diseases. The zymotic diseases which we will consider in this lecture are fevers, diarrhoea, scarlatina, smallpox, whooping-cough, cholera, measles, puerperal fever, croup, and diphtheria; and we must look upon them from various points of view. For instance—first, from the damage they inflict upon us; second, the conditions under which they spread; third, the conditions under which they arise; fourth, the means suggested for their control. Some observations based on a return ordered by the House of Commons, on the motion of Mr. W. H. Smith, M.P. for Westminster, will prove the amount of damage done to us by zymotic disease. Of 3,249,077 deaths which occurred in the United Kingdom during the five years 1865 to 1869 inclusive, 712,277, or 21.9 per cent., were caused by zymotic diseases; in every 5 deaths 1 is due to preventable disease, and we lose at the rate of 150,000 people annually in the United Kingdom in this manner. These deaths are distributed in the three countries in the following manner:—England, 111,418, or 1 in 190 of the population. Scotland, 16,193, or 1 in 194 of the population. Ireland, 18,416, or 1 in 308 of the population. The discrepancy that exists between Ireland and the other countries, in favour of the former, is to be attributed principally to the energetic efforts of the well-organized though badly-paid system of Poor Law medical service, which we have had reason to boast of during the last 20 years in this country. And when to this organization is entrusted the duty of preventing as well as curing the disease, we may expect a still further reduction in the mortality from these diseases. One thing will particularly strike us in the consideration of this return, that is, that by far the most serious of the zymotics are those that are always amongst us—that are in fact endemic in Dublin—namely, fever and scarlatina. We are stricken with terror when an epidemic of cholera or smallpox breaks out, which rapidly sweeps away a large number of persons; but fever and scarlatina gradually and silently take away their thousands from amongst us without much notice being taken of the effect produced by them. Thus, in Dublin, since the introduction of the registration of deaths in 1864, 73,661 deaths have been registered. Of these, 17,156, or early one-fourth, were due to preventable disease, and but 3,000 of these deaths from zymotic diseases were due to cholera and smallpox—the two epidemics that have occurred during that period. Further proof of this was necessary, the report of the Dublin fever hospitals over a period of fifteen years fully substantiates the assertion. This large number of lives lost from preventable diseases shows what a great effect they must have on the total death-rate, especially in large towns. In

addition, also, to the loss sustained both by individuals and families and the community at large by this vast "life-waste," a term applied by my friend, Dr. Maunsell, who is an authority on the economic relations of disease and pauperism, to the loss of life from preventable disease, we sustain a great pecuniary loss. Thus the smallpox epidemic—the most severe that has visited Dublin during the present century, excepting the great fevers of 1826, the famine fevers of 1847, and the cholera of 1832—cost Dublin from £35,000 to £40,000. Nearly the whole of this was spent on hospital appliances, food, medicine, and stimulants for the sick, the medical attendance costing a mere trifle. The number of lives lost were 1,099, which number, it is estimated, represented about 12,000 cases of that disease. The records of the Smallpox Relief Committee show the incalculable amount of misery caused by this epidemic. The applications for relief represented 6,000 persons who were affected by smallpox, and were reduced by it to the necessity of applying for pecuniary assistance for themselves or their families. Among these were 600 and 67 heads of families, 179 of whom died, and the support of their orphans, in many instances, will be a burthen entailed on us for years to come. After this description of an epidemic you will be surprised to hear that smallpox and cholera are but secondary in their destructiveness. They are sharp and decisive; but other diseases, such as fever, scarlatina, measles, and diarrhoea, do their work of destruction quite as surely. During the nine years in which a systematic registration of deaths has existed in Ireland, fever has caused 3,506 deaths in Dublin, an annual average of 389; diarrhoea, 2,576, being an average of 286; scarlatina, 2,407, averaging 267; and measles, 1,124, or at a rate of 124 per annum. It will be seen from this statement that fever is by far the most destructive of these zymotic diseases. This death-rate then represents probably over 50,000 severe cases, and as fevers are chiefly fatal to adults, whilst scarlatina, measles, and diarrhoea are chiefly fatal to children, it is evident that the relative misery and loss produced by fever is greater than by any of the other zymotics. The endemic zymotics constantly amongst us, any of which may at any time assume an epidemic form, are far more destructive than those which only appear as epidemics, and however much it may be our duty to ward off cholera and smallpox from our shores, yet it is equally our duty, and far more important for our national prosperity and domestic comfort, that we should control these endemic diseases which never die out. The fact is that during the last nine years there has been but one week in which no death from fever has been registered in Dublin. The conditions which influence the spread of zymotic diseases are numerous, but may be divided into two classes—namely, those belonging to places, and those belonging to persons or population. As to those belonging to places, the first is the locality, whether high or low, the elevation and geological formation of the ground on which it lies. Next, the facilities for drainage and water supply. The age, condition, and construction of streets and houses; and, finally, the climate. Of those which belong to population—the density of the population, the proportion of pauperism, the cleanliness of the inhabitants, and the accommodation for the sick, are what chiefly affect zymotic diseases. It is a well-established fact that the higher the situation above the level of the sea the less the prevalence of zymotic disease. This is chiefly owing to the facilities afforded in such localities for efficient drainage. It is worthy of note that few large towns are so situated. Birmingham, however, furnishes us with an example. From its elevated position, porous soil, and favourable aspect, it has a system of natural drainage; and, although densely populated, and without any particularly good sanitary system, it is the healthiest of the large towns in the United Kingdom, it usually escapes great epidemics, and has a low zymotic death-rate. The medical officer of the Privy Council has drawn attention to the fact that a large number of English towns have been materially improved in the health of their population by extensive improvements made in their drainage and water supply. Endemic diseases have permanently diminished, and epidemics have fallen with lightness on those towns since these improvements have taken place. It is notorious that old houses in old streets in old towns are the favourite haunts of zymotic disease (but there are other reasons beside age), for, as a rule, it is here that we find poverty, hunger, and dirt, combined with faults in original construction, as want of drainage &c., will make a new house as bad as any old house. Suppose we apply this rule to Dublin. Fortunately we have two old maps of this city—one dated 1610, and another 1728. At these dates there was no "north side" of Dublin, with the

exception of a small district round St. Michael's Church and the Abbey of St. Mary's. Dublin, as a city existed then only on the south side of the Liffey. During the two years ending September 30th, 1871, the houses on the south side of the city from which fever cases had been admitted into Cork-street Hospital were noted 1,190 of these fever houses have been traced out, and of these there were 122 especially productive of fever, and of these 122, no less than 70 are within the old city boundary. The worst fever streets in Dublin are to be found among the oldest. Thus, Francis, which was fully built in 1610, has 28 infected houses out of 140. The Coombe, though not so old, and Meath-street, somewhat more modern, though old, are remarkably productive in fevers. The same may be said of the old streets lying along the bank of the river, though not on the line of our modern quays. By far the greater number of the fever houses of Dublin are consecrated in the area of the city as it existed in 1610 and that which circumscribes the city as it existed in 1728. The next oldest parts, I find, are situated outside this boundary, or in the modern part of the city. These also are the places where all zymotic diseases arise and spread. Thus a cholera map of Dublin or a smallpox map would give similar results as a fever map; and as a matter of fact, of 124 fever nests, 58 at least have been also smallpox and cholera nests during the late epidemics. This statement does not apply to Dublin alone. The *Lancet* report on cholera haunts and fever dens in London, and Dr. Gairdner's remarks on the fever dens of Glasgow, point to the same conclusions. Touching the conditions as to population, which act as promoting causes of zymotic diseases, density, poverty, and dirt appear to be the principal factors. Density of population is the greatest promoting cause of zymotic disease. This may be proved by a comparison between the various London districts and between 13 large towns in the United Kingdom. Of the 13 large towns, in four the density of population, as measured per acre, is above average, and in three of these the zymotic death-rate is above average, the fourth being Birmingham, which we have already proved to be an exception to all these rules. Of the 28 London districts, in 20 the density of population is above average; in 17 of the 20, or 85 per cent., the zymotic death-rate is above average. Pauperism also possesses considerable influence in promoting zymotic diseases. In twelve of the twenty-eight London districts pauperism is above average, and in eight of these, or 75 per cent., the zymotic death-rate is above average. Density of population, however, is not the direct outgrowth of pauperism—but when both are combined, the zymotics prevail to the greatest extent. We cannot as yet ascribe any particular kind of disease to any particular kind of dirt, but it has a vast deal to do with zymotic disease nevertheless, and we know that those places have least zymotic disease which have least dirt, or where the greatest facilities are afforded for the removal of dirt by drainage, &c.; and if we admit that any diseases are promoted by contagion, it is manifest that in cleaning away all dirt we have the best chance of removing the most dangerous though most minute of all dirt—the contagious particles of disease.

(To be concluded in our next.)

DONKEY ENGINES AND STEAM WHISTLES.

Impromptu.

"I'm blowed," shouted Bury, "if asses can bray,
And relish the delicate thistles;
I don't see the use of going out of our way
To silence the screech of steam whistles."
Quoth Byrne, "That shows fellow-feeling is strong,
And, like water, finds its own level;
Let us bury our dead as we go along;
And pitch nuisances straight to the d—l."

H. VERR KERR.

Cork-hill, March 24th, 1873.

REV. JOHN O'HANLON'S LIVES OF THE IRISH SAINTS.—The first profusely illustrated number of Rev. John O'Hanlon's long-announced work, "Lives of the Irish Saints," is expected to be published in Dublin shortly after Easter, and to be derived from original sources, both as to literary materials and artistic subjects. Many hundred beautiful wood engravings of old Irish churches will be introduced, and the whole work will be completed in twelve royal 8vo volumes, comprising 120 shilling numbers, only issued to subscribers.

The Irish Builder.

VOL. XIV.—No. 320.

The Strength of Building Materials.*

SECOND NOTICE.

ARCHITECTS, builders, and workmen mostly acquire their best knowledge from bitter experience. In their case, as well as with others, it may be truly said, "Experience teaches." In a primitive state of society, or even in that condition in which it existed up to the close of the last century (in regard to many building matters), the waiting to obtain experience by repeated failures and losses, and profiting by it, would seem to have been an indispensable preliminary. Times, however, have changed, and though long practical experience is still valuable, there is no necessity on the part of those engaged in the building world to endure serious losses now before practically knowing the principles of their profession; nor should there be one found whose qualifications reach to no higher a standard than the application of the "rule of thumb." With such text-books and manuals as there are now before the world, and which may be had, without much trouble or expense, the epitomised experiments of many able minds ready to hand for reference or application. If men will not learn, let them suffer; if men will grope on in the dark while a lamp is within their reach they deserve to stumble into pitfalls. The misfortune that accompanies the perversity or ignorance of prime movers in undertakings, is that not only do their subalterns and workmen suffer, but hundreds of other people are made the innocent victims of irresponsible incompetency. Knowledge is power in every walk of life, but technical knowledge is multiplied power in regard to the principles of a man's art. It were to be wished that many of our architects and builders made themselves a little better acquainted with the principles on which some of the most important applications of their art depend, and which are so ably illustrated in Mr. Stoney's work. If they did, we should not witness so many tumble-down structures, and, where standing scarcely upright, so hideously ugly. Many of our present-day structures are like our ill-reared and badly-nursed children. Despite their stature they are unwieldy, and are unable to stand alone. Houses, like children, too often are afflicted with the "rickets," and need something more than splints to prevent them from tumbling over and coming to grief to the chagrin of their architectural parents.

On the crushing strength of materials in the book under notice, we have much valuable information summarized, and for convenience the results of compressive strains are sub-divided, hence we have flexure, crushing, buckling, bulging, splintering—terms that are pretty well known to building workmen, but of the real causes of which they know so little, or the limits,

which they are unable to define. Following the author—*Flexure* is the bending or deflection of a pillar whose length is very considerable in proportion to its thickness or diameter. *Crushing* may be subdivided into buckling, bulging, and splintering. *Buckling* is the indulation, wrinkling, or crumpling up, usually of a thin plate of a malleable material. Buckling is frequently preceded by flexure; for instance, long tubes of plate iron are compressed longitudinally; they first deflect, and finally fail by the buckling or puckering of a short piece on the concave side. *Bulging* is the upsetting or spreading out under pressure of ductile or fibrous materials, such as lead, wrought-iron, and timber, also of many semi-ductile crystalline metals, such as cast-brass or zinc. *Splintering* is the splitting off in fragments of highly crystalline or granular materials, such as cast-iron, glass, timber, stone, and brick. The splintering of granular and vitreous materials is often abrupt, and terminates in their being crushed to powder, while even the most crystalline metals are to some extent ductile, and therefore bulge slightly before they splinter. Again, some materials, such as glass, form numerous prismatic splinters; others, like cast-iron, form two or more wedge-shaped or pyramidal splinters, the plane of separation being oblique to the line of pressure.

A consideration of the above points is of importance to builders and contractors generally; for architects and engineers in many cases leave the choice of providing for a difficulty, where strength is required, to the contractor. Experiments have proved that the strength of a short pillar, no matter what the material, having the same diameter, does not vary much, provided the length of the pillar is not less than one or does not exceed four or five diameters. The weight that will just crush a short prism whose base equals one square unit (a square inch), and whose height is not less than one and a-half, and does not exceed four or five diameters, is called the *crushing strength* of the material experimented upon.

A plate is given by Mr. Stoney illustrating specimens of cylinders and prisms of cast-iron subjected to a crushing force, with representations of their angles of fracture. According to Hodgkinson, in timber, as in iron and crystalline bodies in general, it appears that crushing takes place by wedges sliding off at angles with their base, which may be considered constant in the same material, from which it is deduced—the strength to resist crushing will be as the area of the fracture would in the same material, always be equal to the direct transverse area, multiplied by a constant quantity. Speaking of the line of thrust, Mr. Stoney observes—"If we could insure the line of thrust always coinciding with the axis of the pillar, then the amount of material required to resist crushing merely would suffice, whatever might be the ratio of length to diameter. But practically it is impossible to command this, and a slight error in the line of thrust produces a corresponding tendency in the pillar to bend. With tension rods, on the contrary, the greater the strain the more closely will the rod assume the straight line, and in designing their cross section it is only necessary to allow so much material as will resist their tensile strain. This tendency to bend renders it necessary to construct long pillars, not merely with sufficient material to resist

crushing, supposing them to fail from that alone, but also with such additional material or bracing as may effectually preserve them from yielding by flexure. In masonry, heavy timber framing, or similar massive structures, the desired effect is produced by mere bulk of material, which insures the line of thrust always lying at a safe distance within the limit of the structure. In hollow pillars the same result is obtained by removing the material to a considerable distance from the line of thrust, which, though it may deviate slightly from the axis of the pillar, yet will not pass beyond its circumference." With the above observations in general we entirely concur; but we may remark "mere bulk of material," though it may insure the safety of the superincumbent structure, the exact bulk or quantity of the material necessary to sustain the weight to be placed upon it ought to be accurately known. The desired effect is too often produced by a great waste of material, and consequently money is expended where it might be profitably saved. In relation to timber pillars Mr. Stoney gives Hodgkinson's rules for solid rectangular timber pillars. Hodgkinson's experiments proved that the strength of long round or square timber pillars is nearly as the fourth power of the diameter or side divided by the square of the length; also of rectangular pillars of timber, experiments showed that the pillar of greatest strength, where the length and quantity of the materials are the same, is a square. The following rules are given by the late Professor Hodgkinson for the strength of timber pillars with both ends flat and well bedded, and whose length exceed 30 diameters:—

Let W = the breaking weight in tons,
 l = the length of the pillar in feet,
 d = the breadth in inches.

For long square pillars of Dantzic oak (dry)—

$$W = 10.95 \frac{d^4}{l^2}$$

For long square pillars of red deal (dry)—

$$W = 7.8 \frac{d^4}{l^2}$$

For long square pillars of French oak (dry)—

$$W = 6.9 \frac{d^4}{l^2}$$

When the timber pillars are less than 30 diameters in length they come under the class of medium-sized pillars. As the strut is a medium-sized pillar, we have the true breaking weight given thus—

$$W' = \frac{Wc}{W + 4c} = \frac{329.5 + 434}{329.5 + 4 \times 329.5} = 218.3 \text{ tons.}$$

This will be the result, provided "the ends are very carefully bedded, but if they are liable to rough adjustment, as in the cross struts of a cofferdam from which the example has been taken, the breaking weight will probably be about one-half the above = 109 tons, and the safe working load for this kind of temporary work will be one-fourth of this again = 27.25 tons."

In our articles on "Building and Ornamental Stones" we have quoted some figures as to the strength of Irish building stones, as given in Mr. Wilkinson's work. Mr. Stoney, as well as Mr. Hull, has usefully availed himself of Mr. Wilkinson's experiments, as given in "Practical Geology and Ancient Architecture of Ireland," and also of Barlow "On the Strength of Materials." In dealing with transverse strains there are several rules given and formulae for girders supported and

* "The Theory of Strains in Girders and Similar Structures, with Observations on the application of Theory to Practice, and Tables of Strength and other Properties of Materials." By Bindon B. Stoney, M.A., M. Inst. C.E. New Edition. London: Longmans, Green, and Co.

loaded in various ways. Semi-girders loaded at the extremity, loaded uniformly, supported at both ends and loaded at an intermediate point, supported at both ends and loaded at the centre, and tables of coefficients of rupture. For instance, when a semi-girder is loaded at the extremity the following relations are established:—

$$W = \frac{a d S}{l}$$

$$S = \frac{l W}{a d}$$

in which W = the breaking weight, a the sectional area, d the depth, l the length, S being the constant which must be determined for each material by finding experimentally the breaking weight of a girder of known dimensions and smaller in section to that whose strength is required.

The constant S is called the coefficient of transverse rupture, or, more briefly, the coefficient of rupture, of that particular material and section from which it is derived, and equals the breaking weight of any semi-girder of similar section in which the quantity $\frac{a d}{l} = 1$. By reasoning, similar other formulae is for girders weighed or supported in different ways. Keeping to the subject of timber, we have the result of an experiment made by Mr. Anderson of a piece of memel fir two inches deep and $1\frac{1}{2}$ inches wide, which was securely fixed at one extremity, the projecting part being two feet long. It sustained a load of 504.5 lbs. at the end of twenty hours without breaking right across. This load, however, upset the timber on the lower or compression side of the fulcrum. The value derived from this experiment is as follows:—

$$W = 504.5 \text{ lbs.},$$

$$l = 24 \text{ in.},$$

$$d = 2 \text{ in.},$$

$$b = 1.94 \text{ in.}$$

$$S = \frac{l W}{a d} = \frac{24 \times 504.5}{1.94 \times 2 \times 2} = 1560 \text{ lbs.}$$

We are here told that the value of S exceeds that given in the table—namely, 1,348 lbs. The piece of memel, however, used in this experiment was remarkably straight-grained and well seasoned, and consequently above the average.

The importance of dry or well-seasoned timber cannot be over-estimated in building or engineering constructions, but of these and other matters we may speak in another paper.

LESSONS FROM THE CENSUS.

KILDARE.

THE Census Commissioners in their reports do not supply us with essays, but they supply us with facts, or at least with tolerably correct figures, without which all our essays on the rise and progress of the country would be nearly valueless. In our former articles on Carlow and Dublin, particularly the latter, it was seen how we fared in respect to education, religion, and the industrial arts. A county, however, like Dublin, with a city which is the capital of the country, occupies an exceptional position, and cannot be brought into comparison with an inland county, the majority of whose population is engaged in agricultural pursuits. Dublin has many feeders, and, it may be said, inland towns many weeders, by which numbers of the inhabitants are plucked up by the roots, some of whom survive by trans-

plantation, and others which wither or disappear in the process.

The County of Kildare comprises 14 baronies, and there are in the county 14 petty sessions districts and three parts of petty sessions districts. Its quarter sessions are held in the towns of Athy and Naas. The county includes three townships—Athy, Naas, and Newbridge, but there is no parliamentary or municipal borough. Although Kildare contains portions of no less than six poor-law unions there is no poor-law union wholly within the county. In regard to the distribution of land, there are under tillage 188,446 statute acres; pasture, 218,035; plantation, 7,585; waste, bog, mountain, &c., 53,741 acres. In the matter of dwelling-houses there are inhabited 14,166; uninhabited, 858; building, 28; out-offices or farmsteadings, 18,700. These last figures plainly prove the agricultural character of the county. The population is made up of 88,614 persons, of which 44,946 are males and 38,668 females. These figures, if correct, are not unworthy of notice, for we generally find in other places the female population greatly exceed the male, but in this instance the males are in the majority. It will be instructive to scan the figures in the six census periods from 1821 to 1871. In 1821 there were inhabited houses, 16,478; uninhabited, 406; building, 17. In 1831, inhabited, 17,155; uninhabited, 888; building, 158. In 1841, inhabited, 18,556; uninhabited, 716; building, 116. In 1851, inhabited, 15,823; uninhabited, 949; building, 41. In 1861, inhabited, 14,596; uninhabited, 544; building, 54. The figures for 1871 are given above. Looking at the state of the population in the six census periods we find that in not one of them do the females exceed the males, though in the first census period they approach the nearest to an equality. The population in 1821 was 99,065 persons; males, 49,988; females, 49,077. In 1831, 108,424 persons; males, 54,472; females, 53,952. In 1841, 114,488 persons; males, 58,080; females, 56,408. In 1851, 95,723 persons; males, 48,528; females, 47,195. In 1861, 90,946 persons; males, 48,960; females, 41,986. The Kildare lasses and ladies ought not to find it difficult to obtain husbands in 1873, for according to the census of 1871 there are upwards of 6,000 more of the "lords of creation," young and old, than the fair Norahs of Kildare. On reference to the census of Dublin, we find in 1871 there was 188,108 males and 217,154 females, so that the poor lasses of Dublin must be in a plumping majority, even allowing for those engaged in doll-dressing and other juvenile amusements.

There is room for much improvement in the character of the dwellings scattered over Kildare. We are already aware that some commendable efforts at improving labourers on farm dwellings have taken place of late years, and notably those of the Duke of Leinster. The census figures show us, however, the paucity of first class, second class, or even third class accommodation in the county. Taking the rural and civic districts *in globo* we find the number of families occupying first class accommodation are altogether only 988; second class accommodation, 4,868; third class, 5,994; while the fourth class accommodation, mostly confined to fourth class houses—that is, houses of coarse stone, or brick built and mud cabins, number 8,182 families. Kildare has, of

course, no seaport, yet we have a return of the number of craft engaged in the inland navigation on the night of the 2nd of April, 1871. Craft at Athy, 9; at Celbridge, 1; at Naas, 27; total, 37. Neither in the rivers, creeks, canals, or lakes or other form of waters were there one craft engaged in fishing or pleasure. Of persons engaged as working in houses and buildings we find 3 architects returned, 1 surveyor, 15 builders, 564 carpenters and joiners, 23 bricklayers, 189 masons and paviors, 55 slaters and tilers, 21 plasterers and whitewashers, 64 plumbers, painters, and glaziers. The trades should have been kept separate. Every man might be a mere whitewasher, but he could not be a journeyman plasterer; also plumbers in this country are generally distinct from painters—the latter is generally a glazier as well as a painter. The workers in stone and clay are as follows:—Stone quarriers, 41; stone merchant, agent, dresser, cutter, polisher, 23; limestone quarrier, lime burner, 14; brick-maker, dealer, 42; road contractor, inspector, surveyor (not local board officer), 38; road labourer, 13; scavenger, dust collector, 1. The last unit proves a good deal. Of the general labourers we find 8,845 returned, the majority of which may be assumed to be agricultural labourers. There are 9 civil engineers classed under the heading of scientific persons, and 1 "others." Authors and literary persons are not very plentiful, for under the head of author, editor, writer we find only 5 persons, "others," 298. These last are scholars and students. There are 2 artists (painters), and 3 photographers. Workers on books, bookseller, publishers, 2 bookbinders, 2 printers, 10 newspaper-agents, vendor, newsroom-keeper, 1. Of teachers we have—Schoolmasters, 28; teacher, professor, or lecturer, 110; others, 11. Of course, among the 110 teachers, professors, and lecturers are included those belonging to the colleges in the county.

Taking the religious census separate, we find of clergy, Roman Catholic, 79; Protestant Episcopalian, 48; Presbyterian, 8; Methodist, 1; other persuasions, 1; missionary scripture-reader, itinerant preacher, 1; monks, 13; church, chapel, officer, 5; others, 479. These last are divinity students. The total number of persons and percentage belonging to each religious persuasion in 1871 was, Roman Catholics, 78,879, or 86.0 per cent.; Protestant Episcopalian, 10,038, or 12.0; Presbyterians, 969, or 1.1; Methodists, 500, or 0.6; all other denominations, 228, or 0.3.

The next figures will show the number and percentage of the illiterate of five years of age and upwards, and they furnish cogent reasons in favour of elementary education being looked to a little better in the County Kildare. We hope in the next census, if we live to see it, we shall not encounter such a mass of living ignorance in any civilized country. In saying this we do not desire to press hard on Kildare, for there are other counties quite as bad, when we compare their populations. Roman Catholics, 18,493, or 28.9 per cent.; Protestant Episcopalian, 817, or 9.0; Presbyterians, 45, or 5.3; Methodists, 27, or 5.8. The total number and percentage of the illiterate, five years old and upwards, amounts to 19,409, or 26.0 per cent.

The number of persons who can speak the Irish language in Kildare is much less than in the census of 1861. Those who could

speaking Irish and English in 1871 are 209 males and 51 females, or 260 altogether. In 1861 there were 478 males and 76 females, or a total of 554, who could speak both the Irish and the English languages.

There has been a great drain by emigration in Kildare since 1861—a total of 7,419 persons, or 4,165 males and 3,254 females. Putting together the two census periods from the 1st of May, 1851, to the 31st March, 1871, we have a general total of 19,676 persons, or 10,682 males and 9,044 females. Both sexes nearly in equal proportions seem to have fled the country.

We must stop here for the present; but probably we shall again look through the Census Report of the County Kildare, for, though dry, it is not barren, but suggestive of serious consideration.

SANITARY MATTERS.

It is quite bad enough for the poor to have to pay for inferior or unwholesome food or drink without, in addition, to be deprived of just weight or measure. We have strongly denounced the nefarious system on former occasions, and we are glad to see that some of the culprits have had to pay the penalty for their misdeeds or to receive a "caution" to beware. Upwards of thirty persons were summoned to the Northern Divisional Court for using unjust weights and measures. In some cases we are told the weights were in favour of the public. Perhaps they were when tried on the opposite side of the scale to that generally used. The beam is sometimes made or adapted to order, having a longer leverage on one side than the other. He must be a very green shopkeeper who uses weights in favour of the public to the injury of himself, and they must be equally green people who believe the story.

Publicity and exposure should be given to all malpractices, and imprisonment without the option of a fine to offenders who knowingly repeat the offence. For depositing ashes on the thoroughfare:—

John Mallin and Patrick Campbell were charged by Police-constable 174 D with depositing ashes, &c., in the thoroughfare at Coke-lane. The prisoners said they had been employed by Mr. Patrick Flood, landlord of a house in the lane. Mr. O'Donel ordered the police to summon the landlord. Mr. Flood, who was present in court, said he had employed the defendants, but had not told them to place the rubbish in the street. Mr. O'Donel fined Mr. Flood 10s., and directed Mallin and Campbell to be discharged.

From Kilkenny the following curious case reaches us, termed in the local journal "An Unusual Case." Mr. W. Blunden evidently knows something about the domestication of cats, and is evidently of opinion that neglect is as likely to kill the cat as well as too much care. In the case of Mary Breen he, however, might have used less objectionable comparisons. Here is the case:—

Michael Murphy, relieving officer of the Kilkenny electoral division, at the suit of the Poor Law Guardians, brought before the magistrates the case twice recently alluded to in reports of proceedings at the Board of Guardians of the Kilkenny Union, in which the house of one Mary Breen was reported as unfit for human habitation.

Mary Breen stated, in answer to the Bench, that she was paying 1s. a year for the holding; she was born and reared in the house, and did not like to leave it.

Mr. W. Blunden remarked that it was like the case of a cat that did not like to leave the house in which it had once become domesticated.

Mrs. Breen admitted that the house was dangerous to live in.

Mr. Murphy stated that Mr. Townsend, the agent of the property, told him that he was only paid 1s. a year, and he was obliged to deduct income tax out of it; his (Mr. Murphy's) object was the protection of the woman's life.

The magistrates remarked that the case was an extraordinary one. The woman could not be at any

great loss about the house under the circumstances of its being unfit for habitation. They then made a formal prohibition of the house being occupied until it be rendered fit for habitation; at the same time they remarked that it was out of mercy for the woman that they made this order.

One of those wretched mud cabins, we suppose, which are scattered plentifully over the provinces. There are many of them still disgracing this island, and they are less habitable often than the pigsties and not a few of them not so clean. From their construction, situation, surroundings, and lack of the ordinary requirements of human life, they could hardly be otherwise.

EARLY HISTORY OF THE LINEN TRADE IN IRELAND.

THE history of the establishment, rise, and progress of the linen trade of Ireland would furnish one of the most interesting chapters in the modern history of this country. The primal portion of that history would hinge to a great extent to that of the Huguenot settlement in Ireland, which took place after the Revocation of the Edict of Nantes. We have already given some notices of the pursuits of the Huguenot settlers in our "Notes on the Rise and Progress of Gardening in Ireland," published some months ago in the IRISH BUILDER. The Huguenots received protection from the authorities both in this city and through the provinces wherever they chose to settle down. They gave a great stimulus to the silk weaving and other branches of our native trade, and the Liberties of Dublin was their peculiar quarter, where the weaving trade continued to flourish for many years. The Huguenots early in George the Fourth's reign established a Florists' Club in Dublin, and gave prizes for the cultivation of flowers. Their system of gardening was not the best or the most artistic; nevertheless they gave birth to new impulses and improved tastes. There are a few direct descendants of the Huguenot settlers in this city yet, whose names clearly show their origin. At the close of the last and at the beginning of the present century the names of many of these Huguenot families might be seen represented by several traders and merchants in this city in various lines of business.

It was our intention to have given, at an early date, some more fuller account of the settlement and industries of these exiled craftsmen and manufacturers, but for the present we give an article from a late number of "The Belfast Linen Trade Circular," which will be read with interest, although it must be looked upon as an incomplete and unfinished sketch of what it treats. Probably the writer intends to continue his sketch:—

"Port Arlington, as the name of that ancient and aristocratic borough was originally written, still retains evidences of the national taste which the French settlers rarely failed to leave in their track. In some parts of the town a few specimens of that order of architecture in which these people delighted are yet to be seen. This style of cottage building was marked by high-peaked gables, roof windows, and the parlour lights facing the little gardens instead of looking out on the street. The names, too, of a few of the present inhabitants of Portarlington prove their owners to be direct descendants of the Huguenots. Early in 1694 a French church was opened there, and a State provision of £40 a-year was granted for the support of a minister, whose duty it was to take spiritual charge of the settlers, and to preach to them the gospel in their native tongue. That church existed in its original form for 123 years. An old gentleman, who resided the greater part of his life at some distance from Belfast, used to speak of having, when at school in Portarlington, in 1817, heard the Rev. Charles Vignoles, the last of the French ministers of that time, preach to the descendants of the original settlers in the classic language of Gaul.

"Tradition has handed down some interesting traits of Lord Galway's generous conduct as a landlord, and his anxiety to improve the condition of the native Irish in that part of the Queen's County.

The gallant peer spent much of his time, and no small share of his fortune, in experimenting on an improved course of agriculture, and in teaching the natives a new mode of utilising turf bog. In all these works he was assisted by his countrymen. Lord Galway's system of manufacturing the raw material of Ireland's fuel was by the simple process of compression, effected by hand machines. The article was then dried in the sun, and when fully baked by the heat, it became almost equal to mineral coal, as well for the forge of the blacksmith as for the culinary purposes of cooking or heating rooms.

It is much to be regretted that, in all times, the conduct of men who delighted to do good, and to make exertions for the purpose of leaving the world better and wiser than they found it, has, in many cases, been much misrepresented. Some writers have stated that Lord Galway was actuated by mere personal vanity in most of his projects, but nothing could have been more unjust than that charge. Fifty years before that period the Earl of Strafford, one of the ablest, though, perhaps, most autocratic, of Ireland's Viceroy, was branded as a selfish and grasping administrator, yet no man of his day did so much for the country as that same nobleman. In the great work of improving the Linen Trade he expended £30,000, an immense sum at that time, but in course of his trial before the House of Peers he was charged with having invested that money, not for the advantage of the people, but in order to aggrandise himself by monopolising the flax manufacture. The ingenuity of his political enemies could hardly have raked up against him a more unfounded accusation. Belfast owes a debt of gratitude to the memory of the noble earl, which has yet to be publicly acknowledged. When he wielded power at Dublin Castle, the town now famed as Ulster's capital was just emerging from its position as a fishing village. In 1637, and during one of Lord Strafford's official visits to the North, he purchased from the Governor and Corporation of Carrickfergus certain fiscal rights and maritime privileges, all of which he immediately handed over to John Walker, Sovereign of Belfast, to be held by him and his successors in trust for the commercial interests of the town. From that period may be dated the mercantile advancement of Belfast. Posterity will yet do justice to the character of that unfortunate statesman, and let us hope, that in days to come some citizens of the Northern Athens may recognise in a public form how much the early industry and enterprise of their native town was indebted to the patronage of Viscount Strafford.

"Allusion has already been made to the liberality of the Irish Parliament in passing laws for granting national citizenship to such of the persecuted Protestants of France as might make their future home on the island. Many of these people had fled to different parts of the country in 1682, a pretty large number of whom, chiefly silk weavers, settled in a section of the Irish metropolis, to which they gave the name La Libertie. Among the leading Frenchmen who merged their fortunes in that of the Prince of Orange was David La Touche, a gentleman of high lineage, and whose father owned large property in Orleans. This gentleman settled in Dublin in 1694, and became the liberal patron of his fellow-exiles, the silk-weavers. Great prosperity followed the manufacture for half a century after its establishment, but at length there was got up what was called a Trades' Protection Society, which, by its mischievous interference with the regular course of business, its prohibitions and restrictions, brought immense ills on the manufacture. By this time the original workmen had all died off. Many of their descendants had got into other lines of industry, and the operatives who succeeded them were neither so industrious nor so peaceful as their predecessors. When the superiority of the Jacquard system of fancy weaving had roused the attention of manufacturers, soon after the advent of the present century, the Dublin weavers refused to permit its introduction. Strikes and combinations followed, and before the end of 1839 the most valuable part of Ireland's silk trade had been driven out of the country.

"Having thus slightly touched on the early annals of some of the Huguenot settlements as they existed in other provinces, we now come to the history of the great centre of the Ulster colony as formed at Lisburn. A few French exiles had reached that neighbourhood in 1686, and immediately after the general rush of fugitives that took place in the memorable year of Louis XIV.'s reign. Among these people was Rene Bulmer, a sturdy Fleming, famed in the veterinary art; and cunning in the devices of the anvil. He settled at Lambeg, the site of his dwelling-house, which can be shown to this day, lying within a short distance of the celebrated blanket factory which John Wolfenden, a Yorkshire manufacturer, had established there some time before."

THE GEOGRAPHY OF ARCHITECTURE.*

(Concluded from page 98.)

LET us now glance at the three societies which arose in these realms in imitation of the school in Paris. The one in London indirectly helped the life-school of St. Martin's-lane, which produced those men who, under the Royal protection, became the Royal Academy of Arts. It was subject to the vicissitudes common to infant institutions, and was removed from Spring Gardens to Somerset House, thence to the National Gallery, Trafalgar-square, and lastly to a home of its own in Burlington House, Piccadilly.

In advocating the existence of academies, their first president says:—"The principal advantage of an academy is, that besides furnishing able men to direct the student, it will be a repository for the great examples of art. The student perceives and receives at one glance the principles that many artists spend their lives in ascertaining."

Edinburgh had her drawing-school in a garret in High-street at a rent of £5 per annum!!

From the fact that the Royal Academy in London was open to North British artists no academy was incorporated in Scotland until 1826—just two years after the Royal Hibernian Academy was founded by charter in 1824. The delay arose from the same cause in both cases. Two rival societies of artists in Ireland existed fifty years before one of them was incorporated by Royal Charter in 1824.

Holding sacred the opinion of Sir Joshua Reynolds, it is needless to say that the object of these three Academies of Art is identical. The drawing-schools of the Dublin Society were at first in Mr. West's Academy in George's-lane, and continued there until Mrs. M'Mullen's rooms in Shaw's-court (now Commercial Buildings) were rented by the society at £30 per annum. Next we find the institution housed in Grafton-street, then in Hawkins-street (now a theatre), until in 1815 the Society purchased Leinster House. This time-honoured institution deserves more than a passing word, though indeed it generally speaks pretty loudly for itself; but this is permitted only on holiday occasions, and we rejoice with it. The Dublin Society had been founded 70 years and supported by an Irish State grant 50 years before the union of our Parliament with that of Great Britain—an event, the possibility of which was never contemplated by its noble founders, who had established it in the spirit of a great national institution in which the gentry and nobility of the country were to unite in developing its mental and physical resources. It is needless to say that ever since that event in our history, which occurred at the beginning of the present century, the arts and the functions of the parent society have undergone a certain abatement, if I may be allowed the expression, as injurious to them as it is fatal to all peaceful development of national feeling. The following remarks will show by inference what the society might have done had it been left to the fostering care of a resident gentry and local parliament. Some distinguished artists who were taught in this society, with a list of their English compeers, must go far to sooth our national vanity as to our capacity for art; though we must deplore the interruption of its progress however expedient on other accounts, yet this roll of time-honoured names must first acknowledge the fact that it gives none to correspond with those of Hogarth, Reynolds, Romney, or Gainsborough. These painters flourished fifty years before Ireland had an academy, but their names are in their way unapproachable. Francis Danby ranks with Turner in landscape, Mulready with Wilkie, Mehnes with Chantrey, Foley with Flaxman, Barry with Hayden, MacIise with Etty, Comerford with Ross and Irish Hamilton; Hone, Chinnery, Shee, Cumming, and Cregan need not yield to Owen, Hopner, Beechy, Briggs, Jackson,

Lawrence, or Opie as first-class in portraiture, while Irish Peters, Tresham, Heaphy, and Rothwell may rank with the painters Hilton, Howard, Bird, Drummond, and others who worked for history, or illustrated the beautiful incidents of life. Most of these men belong either to the end of the last or to the beginning of the present century, and are identified with the old order of things.

The names of artists get so mixed up together by writers and speakers on both sides of the Channel that we shall presently be done out of our fair claim to the merits of our distinguished countrymen. The intercommunication of Irish with English artists has not tended to the production of a national style of art in either country, therefore our efforts in spite of us come under the general head of British art.

The works of Irish artists exhibit at no time a distinct nationality, either in subject or treatment. British art, as it stands, exhibits a simple unity of purpose—namely, to sell, the public taste being the standard aimed at.

If we wish to bring forward Irish art we must retrace our steps eight centuries, then indeed we may claim for Ireland the highest reputation for ornamental art acknowledged by all who have the capacity to judge of it, compared with the productions of other nations—Indian, Persian, Greek, Roman, or Arabic. It is still here to maintain its undisputed claim to be the finest conventional ornamentation in existence.

There is no saying how far the fine arts might have advanced in this country but for the disturbances caused by its altered position 70 years ago. The accounts of this period present a Babel of conflicting interest and opinions, and show the evils of a community demoralized in the extreme—a hopeful nationality disintegrated at one stroke, and exhibit, unhappily, the corrupt materials consequent upon such a state. Political and social disorder oppressed the country like a nightmare, and weighed it down for years—"It became treason to love—it was death to defend." But lovely woman interceded for the vanquished—our patriotic women whose writings prepared the way for a better understanding with our neighbours, who lent a not unwilling ear to their sweet influence. The common sense of Miss Edgeworth made them appreciate our wit; Miss Brooks translated for them our ancient poetry; Mrs. Henry Tigh sang sorrowfully the recent past; and Lady Morgan made our nationality interesting in romance. Mrs. Hall assured them that "like a singed cat, we are not as bad as we look"; Mrs. Jameson taught them to appreciate the fine arts, and Mrs. Hamilton, a Scotch lady, author of the "Cottagers of Glenburnie," made us a visit in the most kindly spirit to assist in inspiring our people with tidiness in their habits—her four prints by Holles, whom she got taught in the school of the society, were meant to show the happiness which attends industry, and the squalor and misery consequent upon idleness inside and outside their dwellings. Burrows, Lysart, and a host of the burlesque writers, good and bad, wrote ballads having a local significance. Caricature was the amusement of the day. Banbury, Sidebottom, and M'Clery could paint what words dare not utter. Thus, talent played the fool, like Brutus in the house of Tarquin, until the peace of Europe was proclaimed. Meantime, the Irish people had recognised leaders who were entirely absorbed in establishing political agitation within the letter of the laws of the land. Hickey, like Cobett, gave "Hints to Small Farmers;" Dr. Doyle was rational, manly, and patriotic; Banim, Otway, Griffin, Petrie, Lover, Wills, Carleton, Ferguson, and Hinks burst forth in unfettered literature in the romance of history, antiquities, local characteristics, droll and comic; while Sheil, O'Connell, Boyton, and O'Sullivan showed by their eloquence that she (Art) still lived.

On the occasion of the royal visit in 1821 the society was made a royal institution.

The Royal Hibernian Academy was incorporated, and the smiles of royalty shed a gleam of hope throughout the land. One of the first acts of the society on entering its new residence in Kildare-street was to move for a Wellington testimonial in the Park. So much space was required for the library, museum, chemistry, and natural philosophy departments that the drawing-schools were nearly forgotten, and were at this time housed in the hay-loft. Indeed, these schools suffered much, not only from want of accommodation, but also from insufficiency of instruction. For a whole century it was the boast of the society that the figure school was under a Mr. West, who was the pupil of Vanloo. In 1780 Mr. West died and was succeeded by his son Francis, who had been his father's pupil. This Francis West also died, and was in like manner succeeded by his son, who had also been taught by his father. So that for a period of 110 years the figure was taught by this trio in succession, each less capable than the other—the elder West being simply figure-draughtsman and no artist whatever. It is well for the Irish student of this time that the last West died an old bachelor. To make this state of things more unfortunate still, the society, about forty years ago, suffered both indignity and finance through the impolitic and overbearing conduct of Chief Secretary Grant. The schools, however, such as they were, found a friend and supporter in Isaac Weld. William Carey lectured on the fine arts, Mr. Pomeroy and General Vallancy did what they could as chairmen. Captain Davis encouraged lithography on its first appearance, but notwithstanding these efforts the society became nearly worn out; its art schools were a reproach, the objects in the museum broken and dusty, used-up old porters, old and incompetent officers, it seemed on the verge of ruin. But a new epoch was approaching. The state of local politics made it imperative for the Government to take her by the hand (hold out her hand) and to assist this fine old but much-abused institution. Since that time a new generation has sprung up to witness the society in a higher state of efficiency than ever it had attained before.

Ireland since the Union can boast only of one first-class portrait painter, and, before photography, but of one miniature painter, but of no figure or landscape painter of eminence. Though we cannot of late support artists of any standing, we indulge in the absurd propensity of taking credit to ourselves for the reputation our countrymen obtain in other parts of the world whither they go to earn their bread. "What cannot be cured must be endured," but we have no right to boast of having distinguished men who owe us nothing but their birth, and possibly a considerable deal of suffering before they left us. Foley had made his fortune before we heard of him, and now we thrust honours upon him he could well dispense with. Hogan was permitted to live amongst us in poverty, and when he died everyone crowded at his funeral quite unabashed at their neglect of him while he lived. Behmes, whose head of Clarkson equals the best of Chantrey's busts, died in Middlesex Hospital! Now if we could point out a spot on this island that contains even one work by MacIise, Mulready, Danby, or Behmes it would go some way to excuse the taste we have for appropriating to ourselves the credit due to others. We need not point to one particular class who are indifferent to art; we may say that all are alike in this respect. Still, of all the human races, the Celtic exhibits art tendencies to a somewhat amusing extent. For instance, in Spain Captain Grant found a large portrait of the Duke of Wellington in marshal's uniform doing duty as an altar-piece in a small chapel. Of the same race in France Mr. Hamerton says—"In the little village church of Chaux over the altar is a portrait, in flowing wig, of Bussey Rabutin, the not very respectable cousin of Madame de Sevigné." But we may find the same species of indiscriminate taste exercised nearer home. In an

* Paper read by Henry MacMannus, Esq., R.H.A., at meeting of Architectural Association of Ireland, March 27th, 1873.

obscure church in the south is a portrait by Sir Martin Shee of his patron, General Cunningham, which occupies the place on its walls usually allotted to saints. I could give other instances, if time permitted, of the latent love for art shown by this untaught people. I recollect a story told me by two persons well versed in the arts that a painting, not far from Dublin, of the Flight into Egypt is shown to visitors by its owners as an incident in the life of *Granu Wail*!

Yet, after all this we still labour under the delusion that we are a nation. We were so once, and had trades and manufactures of our own, but they have gone, and we have become simply salesmen for the manufactures of other countries. The trades have gone with the old guilds. Where are our gold and silver smiths gone? With Saint Loy to Birmingham, Sheffield, and London. From the time we open our eyes in the morning till we close them again at night we see nothing of *Irish* manufacture or workmanship, if we except those rude atrocities known as beg-oak ornaments, which are purchased by visitors to this country, and called, as if in derision, "Irish manufacture." And yet our idea of Irish trade is still associated in our minds with ingenious and contented workmen making at home the objects we see around us, but the idea has changed its significance, and now really means trading in wares; and this view of it is to be found in the code of moral sentiments among chapmen since the time that Jacob higgled with Laban.

In the year 1849 the Government established schools of design in this country. They had already an existence in England and Scotland. Their object was to train designers to assist the manufacturer who desired to compete with France in the market. But so little did the Government of that day understand of the relations of manufacture to art, that Lord Clarendon, anxious to advance the manufactures of this country, imagined this would be best done by getting up schools of design. It has since been discovered that the manufactures must first exist, and then a cultivated taste in the customer will demand beauty in pattern. For this purpose the present Schools of Art were organized, where the elements of practical art are taught to all ranks, from the palace to the hovel, under the care of an enlightened administration. The success attending these schools is well known, and has called forth many a noble panegyric.

Mr. Armitage, the artist educated under Delaroche in Paris, stated some twenty years ago before the Royal Commission on Art, that no one in Great Britain (or Ireland) knew what drawing was. About the same time Mr. Ruskin said there was not a member of the Royal Academy of Arts who knew how to put a Gothic arch in perspective. Mr. Disraeli in his "Coningsby" says—"We shall never have good architecture till we hang an architect every year." Among other improvements visible at the present time, and marking a more legitimate and healthy appetite for progress, is the decline of the odious and vitiating traffic in black copies of the old masters. The trade in these wares was as ruinous as it was demoralizing to many otherwise good and worthy people. The commercial morals of the dealers were those cultivated by the jockey and the blackleg, and presented that strange phenomenon, a human being in whom is centered the extremes of refined taste and rapacity. Your highly-respectable picture dealer only flies at "high game"—princes and nations are his quarry, and his reputation, which is literally dear to others, is part of his capital.

And now, gentlemen, I proposed to draw your attention to the circumstances which have influenced the fine arts in Ireland, and I have done so to the best of my ability within the time allotted me. I have shown you that the fine arts were introduced into this country by a resident gentry, and at whose departure from the country they languished. I have shown you how attempts were made to create manufactures amongst

us in lieu of the trade we lost by the union with England, and that they resulted in failure. I have intimated that we are only a nation of agents for foreign houses. I have endeavoured to show you that we have a capacity for everything except governing; that our sagacity cannot suspect the insidious approaches of what must ultimately ruin our national honour, and that we are at this moment blind to the fact that we are imperceptibly but surely controlled by those who only understand our weak side, our vanity, and that provided we get a pretty shadow we don't mind who takes the bone. This is called progress, and so it is, but it is circus progress, with a whip in the middle and a body of clowns and mountebanks making smaller gyrations within it. These facts put together may convey this lesson, namely—those who cannot govern themselves must permit others to direct them, whether for good or evil will depend upon the part we ourselves take in it.

Mr. C. H. Brien, A.R.I.A.I., moved a vote of thanks to Mr. MacManus, who had done them a double service that evening—first, in calling their attention to the relations of geography and geology to architecture; and secondly, had given them a very interesting paper on the history of art in Dublin from the beginning of the century. We have seen how certain structural forms had become crystallised, as it were, into ornament, the use of wood giving place to stone. This mode of dealing with the history of art is of very great importance, and should prevent a good deal of senseless copying, as such forms should not be perpetuated unnecessarily. Mr. MacManus had alluded to Mr. Wilkinson's work on the geology and architecture of this country. It is of great value, and with the sheets of the Geological Survey should facilitate and commend the use of local material. He did not mean that because Ireland produces only tweeds and friezes we should not use broad-cloth, but we should not go out of the locality of the building for materials without good reason. Fine stone, such as Portland, &c., for carving, of course, cannot be had in Ireland. Mr. MacManus's paper on the history of art in Dublin must be of value, especially to our young men. We do not study the matter sufficiently in the light in which he has placed it before us. He had the pleasure of knowing two of the artists mentioned—namely, Messrs. Rothwell and Cregan, who have recently passed away, and their works are evidently worthy of the position he has assigned to them.

Mr. John L. Robinson (hon. sec.) seconded the vote of thanks.

The President (J. J. O'Callaghan) said, in putting the vote of thanks, that it was a mere matter of form to put it to the meeting, as he knew all present would agree with him as to the value of Mr. MacManus's paper that they had just heard read. His diagrams were most instructive. He considered it a want not to trace the origin of the different styles of architecture. Mr. MacManus had shown the similarity that exists between the earliest monuments of our country and those on the distant coasts of India.

CURRENT LITERATURE.

THE MAGAZINES.

Tinsley's Magazine is fully up to the mark this month, and it contains scarcely an inferior article. "A Pair of Blue Eyes," "London's Heart," and "Home, Sweet Home," are continued, and each is capital in its way as stories of unflagging interest. The minor stories, "All a Mistake," "Chiefly for this End," and the Scandinavian tale of "Avilda," are all readable and interesting. Intending emigrants may learn wisdom and caution from "Confessions of a Colonial Failure." "Buffalo Hunting in India" is a graphic account of that sport. On the whole the magazine will give ample satisfaction to all readers in its present number.

Blackwood has two or three good articles, that on "Shakespeare's Funeral" being very interesting, though imaginary. The late Lord Lytton's "Parisians" is continued. There is a ballad by the Earl of Winchelsea, "Lord Hatton, a Tale of Castle Cornet, Guernsey," and a political onslaught on the late Government crisis, entitled "The Late

Attempt at Suicide." The purely literary matter pleases us most.

Frazer contains a very useful paper entitled "Ought Government to Buy the Railways?" The writer is of opinion that the State Management of the railway system would not be so advantageous as the present system. In some points he makes a tolerable clear case in favour of private enterprise. Mr. Reginald Palgrave contributes a historical paper of merit on the "Story of the Death of Thomas, Earl of Strafford." The other papers are of the average kind.

Dublin University Magazine.—What we were wont to call our old native mag. has several readable articles, light, solid, and critical. "Chaldea and Assyria" and "Pekin and the Chinese" are two articles that will afford information. In "The Ballads of Lower Brittany" Irish poets and ballad writers may catch glimpses of a spirit and feeling common to their own country.

Cornhill, besides its serial story of "Old Kensington," which sustains its energy, contains a few good contributions. "Byzantine Anatolia," "Notes on Ghosts and Goblins," and "Chronicles of the Cotton Country" are the best.

The *Gentleman's Magazine* has a number of good articles. Mr. Cowden Clarke furnishes a second paper on "Shakespearean Facts." "Charles the First" is a well-written contribution, and the sporting articles are lively and readable. The lines on the late Emperor Napoleon, by the Earl of Winchelsea, are commendable, and evince a liberal spirit.

Belgravia is quite as good as last month. Its prose is capital, but its poetry is profitless. Mr. George Augustus Sala strides along in his "Imaginary London" to his own and his readers' amusement. Sala, unlike many, is amused with what he writes, because it pays him very well to go "Thrice Round the Clock," if need be, though he is not very particular as to keeping time. "The Metamorphoses of Worlds" and the "King's Ball" are interesting papers, and the editor's continued story, "Strangers and Pilgrims," proceeds well.

Colburn's New Monthly contains a few light articles that will afford pleasant reading. "The Irish Story," "The Lost Bracelet," and the "Allegories of the Month" are among the most interesting.

St. Pauls is better this month than usual. The leading story, "Mrs. Carrington," continues pleasantly and well. "Faust for English Readers" is a good critical paper. "The Heart of a Stranger" deals with British seamen and unseaworthy ships. It is a severe satire in blank verse. "The Oyster," Dora Greenwell's "Secret," and the paper on "Convalescence" are also papers that can be recommended.

Temple Bar has an opening story by Mr. Wilkie Collins which can be pronounced good. "The Evening with Erasmus" will afford a fair picture of the Tudor times, its ways, learned men, and worth. "James Hannay" is a very kind and appreciative tribute to the memory of a recently-deceased novelist, whose works, though not many, were well known.

London Society, on the whole, is a good number. "Two Years Since," the Rev. F. Arnold's "Books of the Season," "An April Daisy," and the lines on "My Grandmother," which are well conceived and also well illustrated.

St. James's Magazine is well filled with information. The serial story of "The Cravens of Cravenscroft" runs on towards its end with sustained power. "Scraps from Recollection," by Sir George L'Estrange, anent the Peninsular War, "Sea Drift," and "Modern Minor Prophets," are interesting papers. "Canada and the Washington Treaty" will please a class of politicians, and it is forcibly drawn from a Conservative point of view.

The *Fortnightly Review* and the *Argosy* are two excellent numbers this month; the former contains some able articles, and the latter some interesting ones.

TEMPLEBRADY CHURCH, CROSSHAVEN.

THROUGH the energy and zeal of the Rev. Mervyn Archdall, whilst Rector of Crosshaven, the church, of which we give a sketch, was erected by Mr. Robert Walker, of Cork, at a cost of about £2,000, from the designs of Mr. Burges, architect, London. On the Rev. Mr. Harman, the successor of Mr. Archdall, devolves now the duty of completing, by the erection of the tower, one of the happiest of architectural compositions it has been our pleasure to describe for a very long time.

The style, as may be observed, is Early Celtic. We use the term advisedly, because the same types pervade both the Gallic and Hibernian: we, therefore, claim it as our own. The building is decidedly "racy of the soil," and in pleasing harmony with the surrounding scenery.

To erect the round tower, about £800 is required, and it is greatly to be hoped that those who have any love of art in their souls will help on the good work.

Our illustration of this architectural *bijou* affords an opportunity, of which we gladly avail ourselves, of drawing attention to the most charming of watering places—"The Queen of the South." Nature has with lavish hand bestowed every gift at her disposal on this favoured *pet*. Beautiful indeed are all its surroundings—hill and dale, woodland and *lea*, flowing river and golden strand. Situated on an isthmus, we have on one hand the deep and dark blue ocean in all its wild and uncontrolled majesty; and on the other, the magnificent and land-locked harbour with its bright and every varying hues, reminding us of some huge dolphin expiring in mighty tazza of emerald and molten gold. An air of calm and peaceful quiet reigns over all; the very elements would appear to visit this spot with some degree of consideration, feeling no doubt ashamed to inflict, with undue severity, their frowns on so *fair a belle*. To Crosshaven applies with equal truth what the poet has attributed to the famous "Auburn" where—

"Coming spring its earliest visit paid,
And parting summer's lingering steps delayed."

We would strongly recommend any one seeking rest and quiet, a genial and salubrious climate, and bathing in sea water absolutely free from contamination, to pay Crosshaven a visit during the present season. It is reached from Queenstown by the railway and river steamers, plying regularly every hour at a fare of a few pence; this short trip across the harbour is a luxury in itself. We venture to predict that a visit once paid will be repeated by those who appreciate the beautiful in nature's handiwork.

CHRIST CHURCH CATHEDRAL.

THE works at the Cathedral are proceeding satisfactorily, though of late some delay has occurred through trade disputes. The south aisle wall is finished, the piece of south arcade in position, and the arches in process of turning. The west front is considerably advanced. The eastern part of the Cathedral has been removed, exclusive of two of the eastern bays of the apse, which are to be restored and completed, with the addition of three more arches raised on the old foundations.

The foundations of the external wall of the choir are sunk. The Synod Hall is also progressing, and it is thought, if no unforeseen hitch occurs, it will be ready for the General Synod to be held next year. Throughout the Cathedral there were considerable vestiges of Hiberno-Romanesque work met with, a portion has been destroyed, but there are other portions preserved; and some of the new work has been made to harmonise with the ancient examples. The great liberality of Mr. Roe is further enhanced by another liberal gift of £20,000 towards securing an endowment for the support of the clergy and choir. This sum is given on the condition that the commutation-money of the clergy

and choir be preserved as a permanent endowment fund. It is hardly necessary to say that the contractors, Messrs. Cockburn, are executing the restoration with credit, and that the clerk of the works, Mr. Dooling, acting for Mr. Street, is carrying out his instructions with fidelity and care.

THE TRAMWAY SCUFFLE.

As usual, we have had the edifying spectacle of a tramway scuffle in the Corporation last week—a contest in which the rights of the general public was not upheld, but in which factious opposition was apparent. The tramway is a public good, and a new tramway line should not be laid down to accommodate any mere section of the public, to the inconvenience, loss, or obstruction of the great majority. The advocates for laying down the tramway line in North Earl-street have only one point in their favour—that is, the North Earl-street route is the most direct to and from Clontarf. As against that, the street is a painfully narrow and most populous one, and crowded at all times of the day by both passengers and vehicles, and the running of a tram-line along it would add to the danger that already exists—a danger which is nowise small. Viewing the matter in this light, and having regard to the public safety, Lower Abbey-street is the fittest route, as it has ample width for a double line.

It is perfect moonshine to talk about destroying the privacy of Gardiner-street—the privacy of that street has long since been destroyed, if it ever possessed any. Gardiner-street is a direct route from Dorset and Britain-streets to the Custom House, and innumerable cars, carts, and wagons proceed along it at all times of the day. For several years Gardiner-street is becoming a business street; and although shops are not in the ascendant, in Lower Gardiner-street there are merchants' and agents' offices in number within it, and several streets intersecting it. There is nothing "due to the enterprising business men" of Earl-street more than there is due to the men in the other streets. If a handful of men are to create a monopoly at one side of our city, another handful at another side may scramble for a like benefit. This contest, so far as Earl-street is concerned, is all shop, shop, shop, and nothing else but shop. It is immaterial to half a dozen avaricious shop-keepers how many limbs are broken or lives lost by over-crowding, so long as they can secure customers. The North Earl-street tradesmen are quite right in minding "number one" if they can; but they should remember there are other people, and these other people are the general public, who are as interested in taking care of themselves.

The following sentence from Mr. Byrne's remarks in the Corporation is ludicrously comical when read in the light of the Corporation's own doings. Speaking of the Tramway Company, that enlightened member said—"They should not be permitted to hold up the terminus for auction behind the backs of the Corporation." Most upright member of a most straightforward corporation, poor innocent civic council, the duped and bamboozled of the public? Is it possible that the clique of systematic bubble-blowers and bill promoters who have squatted down in the City Hall for some years past are getting so blind with age and daft with dotage that their interests are no longer safe "behind their backs?" Tell it not in Gath. Whisper it not at Westminster, or the influential commission agents and chimney ornaments of public assemblies in Dublin will collapse like soap balloons.

So the Earl-street people are to appear before the Committee of the House of Commons on the *locus standi* of the Corporation. What next? Where will the delusion end, and when will the citizens collectively open their eyes to the vile and corrupting influences that are at work in their midst?

Throwing aside all reserve, we directly charge a certain well-known clique of com-

mittee-men in our Corporation with being the promoters and abettors of faction. We charge them with voting away the public moneys systematically in promoting and opposing useless measures for the benefit of their friends. The last borough account and the late returns furnish abundant proofs of how the ratepayers of Dublin are plundered to pay for law costs and parliamentary expenses. The Dublin public may well curse the *locus standi* of a corporation that has fattened on their credulity and neglected their interests, until local rule in Dublin has become a reproach, and representation begins to be looked upon as the stepping-stone to jobbery.

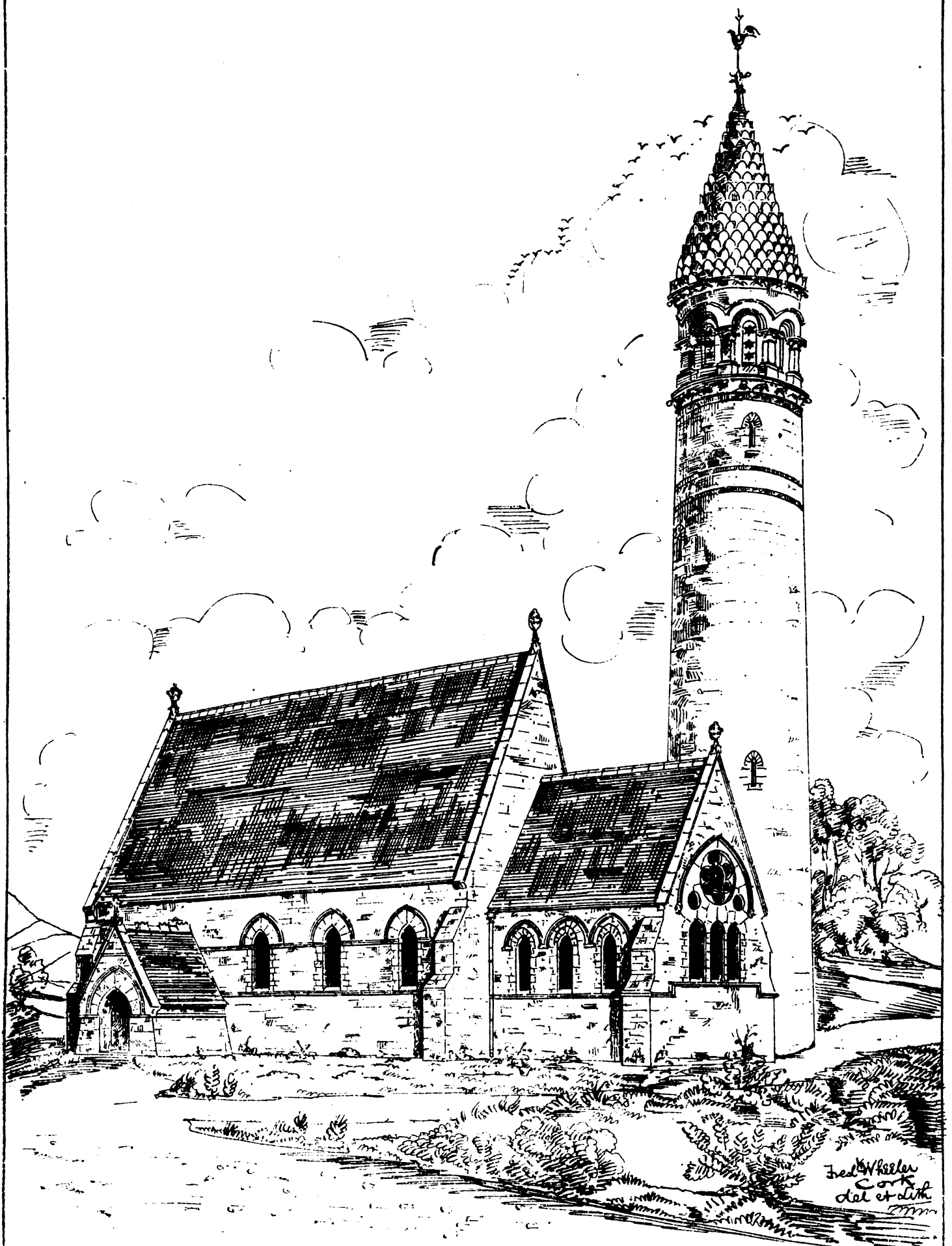
On the tramway question the clique in the Corporation are only true to their original character. The play will run its course, but the curtain will eventually fall to rise no more.

BUILDERS' FOREMEN.

SOME letters recently published in our pages have elicited a letter which we give in another column. If a real, active, and healthy organization can be established, we will be only too glad to assist it by every means in our power, and bespeak for the promoters public recognition and support. We must first, however, feel assured that an organization has been founded possessing some life-blood and stamina, not the creature of an impulse, but the offspring of earnest workers willing to help their brothers and their craft as well as mutually to assist themselves. We have a holy horror of all crude attempts and failures, having witnessed so many in this city and other towns and cities, which began in a flourish and ended in a collapse. In speaking thus, our remarks are not intended to throw any obstacles in the way of present attempts, but, if possible, to nerve all projectors to make their new organizations worthy of public support, that they may be fully entitled to claim it. There exists in this city a good open and a wide field for the working of a "Builders Foremen's Association" or society. It cannot be denied that there are many of our builders' foremen not qualified for the duties of their position, either by experience or technical education; yea, we will even go further by asserting that there are builders' foremen in our midst who lack sufficient common elementary education. Sober and intelligent workmen who are determined to advance themselves will advance in time to the position of foremen or clerks of works. Carpenters generally become the latter more often than masons or bricklayers; but there exists no reason why masons or bricklayers should not occupy the position of clerks of works more often than they do.

Foremen carpenters, masons, and bricklayers, if competent, will be always in request, and it is only by technical knowledge of the principles of their trade that they can really elevate themselves and enhance the value of their services. Building operatives at present possess many facilities that their predecessors had not. There are now schools of art in several places, and mechanics' institutes, where, at a small cost, they can learn freehand, mechanical and architectural drawing—an acquirement which is indispensable to every building operative who hopes to elevate himself to the position of foreman, and eventually to that of an employer. But independent of mechanics' institutes and schools of art, workmen should associate to help themselves and supplement the knowledge they have or may obtain in other quarters.

One of the objects of a builders foremen's organization should be (and it should be the main object) to qualify its members for filling efficiently the office of foremen. Its members should be composed of men who are foremen at present, and of workmen who aim to be foremen or clerks of works. A code of rules should be drawn up for the guidance of its members. Quarterly or half-yearly examinations should take place in architectural



Templebrady Church, Crosshaven C^o Cork. W. Burgess Esq. Architect.

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

drawing and the principles of building construction, &c. It would be wise, we think, also for such an organisation to put themselves in connection with our Architectural Association as far as enlisting the services of the latter body to act as a sort of board of examination, from whom certificates for proficiency could be obtained as a guarantee that the candidates were competent to fulfil the duties of builders' foremen. The qualified members might still continue to work on with their respective employers until an open presented itself for the services of a new foreman or clerk of works. A list of the qualified foremen not engaged should be obtainable, either at the rooms of the Architectural Association or of the secretary of the Builders Foremen's Association. So that any builder, contractor, engineer, architect, public board, or estate agent requiring the services of a good foreman could write to any number of individuals and select one he thought fit.

In connection with an association of builders' foremen there should be a library of useful books, an ordinary reading-room to be open in the evenings, and there should also be a drawing-class and occasional "readings" and lectures. There are other matters also which might be considered in connection with such an organization as that proposed. Perhaps some of our building foremen and journeymen operatives interested in the subject will favour us with their views on the question, and tell us what mode they would pursue for the better elevation of themselves individually and collectively, and for the advancement of the position of their trade from its present laggard condition. The subject requires further discussion.

A MUNICIPAL NOTE.

It is interesting betimes to look back into the ways and means by which popular or unpopular representation was secured, belonging either to parliamentary or municipal assemblies. Upwards of a century ago in Dublin the electoral franchise was exercised by a large number of voters in the Corporation, and those votes were made up by privileges possessed by the old trade guilds of the city. We furnish a complete list of the poll of the city of Dublin, taken in the year 1761. At a later period the poll would show even a greater number of votes. It is in the recollection of many within the present century to what a great extent the poll was swollen by the freeholders and freemen, who were more interested in political wrangles than taking counsel to preserve the ancient spirit and formation of the guilds of trade. The candidates in the above year were James Grattan, Recorder, 1,569 votes; Charles Lucas, M.D., 1,302; Sir Charles Burton, Bart. and Alderman, 1,210; James Dunn, 1,057; Percival Hunt, Alderman, 637; James Digges La Touche, 77. Some of the above names will be recognised even at the present day in the persons of their descendants. The gross poll of the above amounts to 5,888; double voices, 2,866; single voices for Grattan, 15; do. Lucas, 50; do. Burton, 9; do. Dunn, 6; do. Hunt, 64; do. La Touche, 12; total, 3,022. We next come to the votes of the members of the various trade guilds in addition to those of the freeholders, whose votes numbered 635. The guild of merchants, 516; tailors, 124; smiths, 149; barbers, 88; bakers, 16; butchers, 104; carpenters, 209; shoemakers, 75; saddlers, 120; cooks, 80; tanners, 45; chandlers, 80; gloves, 36; weavers, 230; dyers, 45; goldsmiths, 57; coopers, 53; hatters, 52; stationers, 96; bricklayers, 72; hosiers, 57; curriers, 20; brewers, 9; joiners, 68; apothecaries, 18; total as before, 3,022. If the influence of these guilds of trade was exercised in a proper direction, what a vast benefit might not be achieved for the trade and commerce of the city. They continued, however, to act as political feeders to the Corporation, and for all useful purposes seem to have been ex-

tinguished by the passing of the Municipal Reform Act. A complete mystery almost enwraps the history of the several trusts held by these Dublin guilds of trade. Large properties have been made away with, title-deeds destroyed, and there are several families in this city and through the country who at present are in possession of estates that belonged to our guilds of trade—property which should have been held in sacred trust for the use of our citizens. A Parliamentary Commission is needed to unearth these receivers of stolen property. As there seems no hope of a penitential restitution at this date, steps must be taken to trace and recover a portion at least of the property, no matter in whose possession it may be, and no matter how many changes or transfers it has undergone during the present century.

DUBLINIENSIS.

CIVIC LYRICS.—No. XXXV.

TWEEDLE-DUM-DEE.

Air—Bonnie Dundee.

In the Hall of Contention 'twas MacSwagger gnashed—
"Ere the Chamber is squelch'd there are heads to be smash'd,
Then each Volunteer who hates upstarts like me
Will sign the petition of Tweedle-dum-dee."

Chorus—Come fill up your columns, come fill up your sheets,
Come call in your loafers abroad in the streets;
Unloose all your staff from their duties at three,
Or it's up with the chances of Tweedle-dum-dee.

If Tweedle-dum moves with a crab-like attack,
Though it falls in the front it may win at the back;
Then the Chamber, lynx-eyed, still defeated may be
By the strategic movements of Tweedle-dum-dee.
Chorus.

There are goats on Mud Island and asses at Bray;
If there's foes on the Poddle there's friends on the Quay;
And nimble lamp-lighters three thousand and three
Will cry, "Hey for the Council of Tweedle-dum-dee!"
Chorus.

Hie away to St. Stephen's, hie quick to the House;
Let our mountain petition not bring forth a mouse,
Or the Chairman will laugh, with the lawyers, in glee
At the laughing gas Solons of Tweedle-dum-dee!

Come fill up your columns, come fill up your sheets;
Come call in your loafers abroad in the streets;
Unloose all your staff from their duties at three,
Or it's up with the chances of Tweedle-dum-dee.

CIVIS.

NOTES FROM THE SOUTH.

EXTENSIVE building works are about being commenced at the North Mall Distillery, including re-roofing the greater portion of these premises and erecting a coal depôt at Wise's Hill for the Cork Distilleries Company. Mr. Osborne C. Edwards, C.E., is the architect, and the contract has been taken, in a limited competition, by Mr. Barry M'Mullen, builder, of Cork, who has for some time past been engaged in carrying out other extensive works for this firm, both in this city and at Middleton, where he has recently completed a large kiln and malt stores from the design of Sir John Benson, C.E. The same company have also recently had their bonded stores, No. 6, at the Watercourse, Cork, re-roofed and otherwise improved by Mr. Richard Evans, of Union-quay, Cork.

The Cork Hall.—A desideratum has been supplied by the conversion of a portion—known as the "supper room"—of the Cork Athenæum into a most convenient, suitably arranged, and admirably situated Assembly Hall, provided with dressing and retiring apartments, platform, &c. It is certain to be in constant requisition by the caterers to the public amusement and instruction. The works have been executed in an admirable manner, from the designs and under the directions of Mr. Robert Walker, jun., C.E. and architect, who has also recently had works of alteration, improvement, and decoration carried out upon the Athenæum Building, which is now thoroughly renovated and has had its name changed to "The Munster Hall," a much more sensible and satisfactory, though less pretentious, designation. It may, in fact, be considered as an index of the turn in the tide of "exotic snobbishness" which the Corkonians, with all their professions of nationality, are very fond of.

A handsome stone pulpit is in course of construction for St. Finbar's Cathedral, by

Mr. Samuel Murphy, of Mary-street, Cork, from the design of Mr. William Burges, of London, the architect for the church. Irish red and green marbles, Bath and Caen stone are the materials employed, the sculpture is being executed in London! Comment on the last-mentioned fact would be superfluous.

The church of Inniscarra, near Cork, is to have new internal fittings, including seats, pulpit, desk, &c. Mr. W. H. Hill, B.E., architect; Mr. Samuel Hill, builder.

The Wesleyan Church, St. Patrick-street, Cork, is in the hands of the builder, undergoing a complete re-arrangement internally. New wainscoting, seats, and fittings of more convenient form than what has heretofore inadequately served the purposes of an ever-increasing congregation. Mr. Charles Wilson Atkins, of Cork, is the contractor. The cost will be about £1,000. Mr. Robert Walker, jun., C.E., is the architect for these works.

Kinsale.—Mr. George Ford, builder, Kinsale, has been declared the contractor for the new Wesleyan Chapel, for which Mr. Robert Walker, jun., is the architect. The amount is about £800.

The parish church of Rincourran, near Kinsale, is about being re-roofed and otherwise improved. Tenders for this work have been advertised for by the diocesan architect, Mr. W. H. Hill, B.E.

Galley Head.—A new light-house and gas works are to be commenced at once on this headland, for the Board of Irish Lights, from the designs of Mr. John S. Sloane, the engineer to the commissioners. The works are of an extensive and expensive kind; the following is an abstract of the tenders submitted:—

	Light House.	Gas Works.
Robert Walker, Cork ..	£10,200	2,000
Femberton, Clonakilty ..	10,112	1,845
W. H. Hill, Cork ..	8,101	1,846
W. Murphy, Bantry ..	7,889	1,725

Mr. Murphy's tenders were accepted; the work to be completed in two years.

Tipperary.—It has been decided upon by the authorities of the War Department, to proceed this year with the building of a military barracks at this town, to accommodate a depôt of infantry. Last year tenders were obtained, but all were found to so far exceed the amount voted for the purpose, that the matter was postponed until the present. The competition will now be confined to those who originally tendered, the entire cost is estimated at about £25,000. The expenditure of so large a sum will be a windfall for this portion of "Gallant Tipperary."

Crosshaven.—The new pier has just been completed by Mr. Joshua Hargrave, of Cork, at a cost under £1,000, according to the plans and under the superintendence of the County Surveyor for the East Riding of the County Cork, who is also having a sea wall in continuation of the pier erected; this will be a great advantage to this rising and favourite watering-place.

The glebe-house has had considerable additions made to it, and the entire building remodelled and out-offices erected, at an expenditure of about £600, from the design and under the directions of Mr. W. H. Hill, the diocesan architect.

New schools, with residence for teachers and for sexton, are proposed to be erected near the new church, the drawings for which are prepared by the diocesan architect.

The new Catholic church, although proceeding slowly for some time past, is now approaching completion, and it is hoped will be opened for divine worship this summer. It is a consummation most devoutly to be wished, as heretofore many people of this community who would otherwise settle in Crosshaven during the summer have gone elsewhere, on account of the inconvenient distance and limited accommodation of the old chapel. The new building has an imposing look, and in Mr. Pugin's usual style. The workmanship is exceedingly well done, and reflects credit on the clerk of works, Mr. M'Aulif.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.O.D.

GREAT SCAGLIOLA-STREET.

GREAT Scagliola-street, since it first received the name of "Great," has nearly doubled its original length, and in consequence has become greater than ever. Going out on our late visit we found it necessary to hunt up an old map—one not quite as old as Speed's, but one ere the dawn of the nineteenth century. On reference we found that Great Scagliola-street was far out of town, and had no direct outlet from the city or into the city. It had no cab-stands, gas-lamps, telegraph poles, railway signals, timber-yards, wine merchants, newspaper offices, theatres, riding-schools, monumental masons, architects, or builders of note, nor even one famous or non-famous scagliola craftsman or artists. Yet, hey presto! what was nowhere is everywhere to-day. What was cut off from connection with the city is now its radial artery; what was a portion of a country road is now a direct highway of the city. The present generation look upon Great Scagliola-street as a mellow and old one, and it is hardly to be wondered at, for events have crowded so fast upon one another in this quarter that the history of them would afford a fair portion of the modern annals of Dublin. What is the memory of a half century, even though rife with recollection, compared with that of the "Oldest Inhabitant," who meets us at the appointed hour and place, and whom we shall allow to speak as one fully entitled to have his say?—

"When I was a youngster, sir, no thoroughfare existed from where that fountain stands to Terminus-row. If one wished to go to Gravellymount or Hibernia Town he had to proceed through Stoptown-street, diverging at its extremity through Sandpiper-street, into the suburban nucleus of our modern thoroughfare, and thence over the old course of the Dodder. Old Jack Pigeon's House, on the South Bull Wall, was a great resort on Sundays when I was a lad, and my father told me many stories of it and of sights he witnessed in his days. A Poolbeg oyster was a toothsome bit in the days of the old lightermen; but since the Liffey and its tributaries became foul open sewers, our beautiful bay has become an elongated mud-bank, and the oysters as well as the people have been poisoned, and died out. But coming down to more recent times, somewhat early in the present century, this thoroughfare when opened-up became noticeable for the number of squatters, foreign and domestic, who settled down here. Some Italian image modellers and vendors were among those of the earliest settlers, and one Del-Stuccovinni, more speculative than the rest of his countrymen, laid the foundation of the modern trade which has since found several imitators. Stuccovinni employed a number of men and boys to hawk all sorts of images and artistic forms about the town—vases in plaster and alabaster, busts for fanlight windows, and garden pedestals, lions, centaurs, eagles, vultures, and other mythic birds and beasts of prey for ornamental purposes. Stuccovinni made a good hit, and pocketed several hundreds of pounds; but his business was soon invaded by a host of fresh imitators who began the manufacture and modelling of more ambitious works of art. After a while the national artists began to rival the foreign ones, and Great Scagliola-street leaped nearly in one bound from a region of artistic eclipse into a region of artistic light. The first great impulse was given to the new movement by the settling down in this street of two brothers from the northern province, named Matthew and Terence Gillespie. Matthew, the elder brother, was a great natural and practical genius, with a brain-box as capacious as it was certainly fertile in invention. Mat, as he was familiarly called by his friends and customers, was a man certainly born before his time—a man who, had he been born in any other country than this,

would not only have been patronised but promoted to the occupancy of a high and administrative position in the arts. Like many other clever men, Mat was looked upon by many as a visionary, because his suggestions and projects could not be grasped or understood by the shallow mind of his generation. The younger brother, Terence, possessed a good deal of practical knowledge and sense also, and was similarly treated and ridiculed betimes like his elder brother. Matthew was the author of many inventions, and applied for a number of provisional patents for improvement in cement and imitation marble, but for the want of sufficient capital he had to part with his patents or allow them to be infringed by the colourable imitations of others who had boldness enough to pirate a mere Irishman's invention, but not sufficient honesty to pay him for using it. Long before technical education was talked of as a necessity for our art-workmen or craftsmen, the brothers Gillespie gave birth to a noble idea, and made some personal progress in carrying it into shape. I believe the idea belonged to the brother Matthew, but both brothers were interested, and worked together to make it successful. The object was the establishment of a normal school of practical art, in which, in connection with schools of design, there would be also workshops for students applying the principles in modelling and statuary and other forms of the fine and useful arts. A large building was commenced, story after story was raised, with surmounting dome and statue, and when all seemed to point in the way of a realization of a noble idea, bankruptcy loomed, and the works were suspended. The walls, sir, of this building are still standing as a melancholy memento of what wittlings have termed 'Gillespie's Folly.' Success, sir, in the eyes of the vulgar is everything. Had half of those who thought it fashionable to laugh at Mat Gillespie given his project some practical support, perhaps our city would have long since possessed that which she yet stands in need of. Mat Gillespie, several years before his death, emigrated to England, where his talents were better appreciated, and where men of capital were found to take up his inventions and work them to their own great profit. Mat continued to reside across Channel till within a few months of his death, when suffering from a severe stroke of paralysis, he was brought home to this city by his brother Terence, and died at his house in Great Scagliola-street. Terence continued the original firm business and became a public character of note. He executed several public contracts for public boards, merchants, shopkeepers, and private gentlemen in the Scagliola line and in other occult branches of that art. He competed with several of the most noted architects of the day in sending in designs for public statues, triumphal arches, ornamental river bridges, new boulevards, national forums and pantheons, fountains, cascades, aqueducts, asphalt road-ways, roofs, and terraces, and improved scagliola in imitation of every known marble, travertine and serpentine, in Europe. I believe, sir, the spirit of Terry, as we usually called him, was equal to the occasion. Some of Terry's stucco frontispieces were characteristic, and they were designed with a view to perpetuate the fame of the shop-keeper as well as the artist. Between his Doric entablature and Persian parapet he generally introduced an artistic monogram, in which the first letter of his Christian and surname convoluted in all the exquisite intricacies of the Gordian knot. Like Father Pat Horgan, the famous clerical antiquary of Blarney, Terry was heard to declare that as antiquity had puzzled him, he was determined to puzzle posterity as far as his own autograph was concerned. Terry's motto was one which he rigidly believed in, and did his utmost to carry into practice. When his monograms would be in the act of getting their finishing touch, Terry was wont to step down from the scaffold, cross to the opposite side of the street, then, dusting his eye-glass and holding it before his penetrat-

ing orbs, exclaim as he focussed the monogram—'Artes est celare artem' [the perfection of art is to conceal art].

"Terence Gillespie, sir, was not a man to be despised, though possessed of some traits of eccentricity. Like his brother, he occasionally indulged in literary composition. He could make a speech as well as a model, and he was betimes during his public career the terror of police magistrates and editors. Terry was seldom or ever without half a dozen of law-suits or actions for trespass or distress on hand, and he generally came off victorious in every one. If possession be nine points of the law, Terry generally took possession and held it in every court, and he pleaded his own cause so cleverly, and invested it with so many technical and professional terms, that the judges and magistrates were glad to settle it as quickly as they consistently could. When Terry's letters on trade matters or public abuses appeared in the newspapers they generally appeared as they were written, in their native dress and simplicity. Neither the editor nor the sub-editor could venture upon altering that which they did not understand, for, remembering the writer's motto, 'The perfection of art was to conceal art,' the editors left it to the judgment of their readers to discover the beauties of the composition.

"It is now many years, sir, since I met Terence Gillespie, or had the pleasure of having a chat with him. Though not a very old man like myself he must be advanced in years, if he be still alive. If you have any spare time on hand during the next College vacation, I think, Mr. O'Flanagan, it would be worth your while hunting up Terence Gillespie. He would like to have an evening's chat with one of your cast of mind, and I have no doubt but he would show you many old manuscripts and models of value. He could also tell you of the early adventurers and settlers on the virgin soil of Great Scagliola-street. I trust, sir, that some body will yet arise in this city, if they have not already arisen, that will do justice to the practical genius and character of the Brothers Gillespie."

Finding it impossible to conclude our visit to Great Scagliola-street in a portion of one day, we made an appointment with the "Oldest Inhabitant" to continue our excavations in that portion of "Unknown Dublin."

ROYAL IRISH ACADEMY.

It will be seen from the following summary of the annual meeting of the academy that a well-deserved honour has been conferred upon our distinguished *littérateur*, Sir William R. Wilde, for his laborious and untiring exertions in the field of Irish antiquities, archæology, and cognate branches. All who have watched his career for the past quarter of a century and upwards must be impressed with the extent of his labours and their deeply historic worth. The Cunningham Medal has been conferred upon others, who, though they achieved good work in their own peculiar fields of study, yet their labours for versatility fell far short of that achieved by Sir William Wilde. "Better late than never;" the recipient may well feel the consciousness of having fairly earned the honour which has at last been unanimously voted to him for his services and practical labours in the interest of the country in general and the academy in particular.

At the annual meeting there was a large attendance. The Rev. John H. Jellett, B.D., S.F.T.C.D., President, occupied the chair, and Dr. Ingram read the report of the Council, which contained a *résumé* of the work of the academy during the session.

The chairman said they were all no doubt aware that the important business they had to transact that evening was to present, in accordance with the award of the council, the Cunningham Medal on one than whom no former recipient of the medal had more benefited, not only science in general, but the students of science in that academy by the

exertions he had made. Their museum, without a descriptive and scientific catalogue, would be little better than a collection of pretty curiosities. It would not be what it was meant to be—the materials from which the history of the country was to be written, or, as it might fairly be called, the library of the ethnologist. In bestowing this honour on Sir William Wilde, which he did with the approval of every member in the room, he asked Sir William to accept it as a well-deserved tribute to long and successful labour, and to remember that, while they would not have personal feeling enter into the award, they all in their hearts felt a lively gratitude to him for the benefit he had conferred on the Royal Irish Academy.

Sir William Wilde, who was received with applause, said he thanked them in the most cordial manner for the high compliment they had paid him in awarding him a medal which had been bequeathed to the academy by a distinguished citizen of Dublin. He felt the honour more deeply because it had not been conferred upon any member for many years. He accepted with gratitude the honour bestowed upon him for the original arrangement and classification of the museum. It was gratifying to find that the classification he had made had been accepted by, he might say, all the most eminent archaeologists and antiquarians in other countries. He was much indebted to their valued officer, Mr. Clibborn, who was well acquainted with the circumstances under which many of the articles described came into the possession of the academy. He also desired to mention the name of the distinguished academician, Dr. Haughton. So far as his (Sir William Wilde's) labours were concerned, the catalogue consisted of three parts, amounting to 742 pages, illustrated with 626 wood-cuts from the hands of distinguished artists, and containing a description of about 8,000 articles. Of that work a large number still remained in the academy, and he would suggest to the Committee of Publication that it would be for the credit of the institution, and advancement of archaeological knowledge, that the remaining portions of the work be put into the book-market with as little delay as possible. He entreated the academy to open their museum at all times to the public, and especially to the artisans, who had a hereditary right to visit such a place, for they were the descendants of the men who had produced the finest specimens of Celtic art. He also pressed upon the academy the necessity of publishing the catalogue of the Petrie collection presented by the Government. In conclusion, Sir William Wilde said he had left to the academy a very extensive registry of many hundred articles acquired during the years he was connected with the museum department, a special catalogue of more than three hundred most valuable ecclesiastical articles, eighty-four wood-cuts of articles all paid for years ago, and intended for the continuation of the work, and upwards of £50 to the credit of the catalogue in the funds, and finally he hoped he had also left a good name for the Irish collection of antiquities.

The balloting resulted in the election of the following as president and members of the Council, viz. :—

President—Rev. J. H. Jellett, B.D., S.F.T.C.D.
Committee of Science—W. K. Sullivan, Ph.D., sec. of academy; Henry Hennessy, F.R.S. (Vice-President); Rev. Samuel Haughton, M.D., F.R.S. (Vice-President); Robert McDonnell, M.D., F.R.S.; E. Perceval Wright, M.D.; Robert S. Ball, LL.D.; Sir Robert Kane, LL.D., F.R.S.; William Archer, Esq.; David Moore, Ph.D.; John Casey, LL.D.; Thomas Hayden, L.R.C.S.I.

Committee of Polite Literature and Antiquities.—John T. Gilbert, F.S.A., Librarian; John Kells Ingram, LL.D., Sec. of Council; Sir W. R. Wilde, M.D., Secretary of Foreign Correspondence; S. Ferguson, LL.D. (Vice-President); W. J. O'Donovan, LL.D.; John R. Garstin, LL.B., F.S.A., Treasurer; Rev. Wm. Reeves, D.D.; Lord Talbot de Malahide, F.R.S. (Vice-President); Rev. Thaddeus O'Mahony, M.A.; Alexander J. Richey, LL.D.

The following were then elected as honorary members :—

Department of Science.—John C. Adams, F.R.S., &c., Professor of Astronomy in the University of Cambridge; Arthur Cayley, V.P., R.A.S., &c., Sadlerian Professor of Mathematics in the University of Cambridge; James Dwight Dana, LL.D., &c., Professor of Geology and Mineralogy in Yale College, U.S.; August Wilhelm Hofman, Professor of Chemistry in the University of Berlin; Wilhelm Philipp Schimper, Professor of Geology in the University of Strasburg; Padre Angelo Secchi, Director of the Astronomical Observatory at Rome; George Gabriel Stokes, F.R.S., &c., Lucasian Professor of Mathematics in the University of Cambridge.

Polite Literature and Antiquities.—Henry Wadsworth Longfellow, Cambridge, Mass.; His Excel-

lency Cavaliere Constantine Nigra, Italian Minister at Paris; Right Hon. Baron Romilly, Master of the Rolls in England, London; John O. Westwood, Esq., Oxford.

We join in the wish expressed by Sir William Wilde that the prepared work alluded to should at once be put into the book-market. It would be valuable to, not only students in our own country, but to Continental archaeologists, antiquarians, and philologists, whose attention for some years has been turned towards investigating the early state of the language, institutions, and arts of this island.

[The above was amongst a number of articles which were in type, and for which we had not room in our last issue.—Ed. I. B.]

AFTERNOON LECTURES.

DR. GRIMSHAW ON ZYMOTIC AND PREVENTABLE DISEASES.

(Concluded from page 100.)

WE must now direct our attention to a want which exists to a lamentable extent in this city—namely, proper and easily expandible hospital accommodation for all forms of contagious disease; proper means for bringing patients thither; proper means for disinfection, and for the separation of the sick and convalescent from the healthy—such, for instance, as would be afforded by a well-regulated convalescent home. There appear to be certain conditions constantly in connection with outbreaks of certain epidemics—so much so that they may be assumed to be essential to the production of these diseases. The best established of these exist in the production of cholera, diarrhoea, and enteric fever, in connection with water contaminated with sewage matter, and air polluted with sewage gas; also the causation of typhus fever by overcrowding. Besides these we have it suggested, and substantial evidence given in support of the suggestion, that measles is produced by a miasma arising from decomposed vegetable matter, and that scarlatina is produced by decomposed blood and slaughter-house refuse. This is further confirmed by an investigation carried out at my suggestion, by Dr. Maunsell, who found that of 6,000 deaths, occurring in his district, there were 268 from scarlatina; of these 95, or more than one-third, occurred in the districts where slaughter-houses exist, though these districts occupy but one-eighth of the whole. The condition which appears to be necessary to the production of typhus fever is overcrowding; and although overcrowding favours the spread of all kinds of contagion, yet in no case has it been so closely and frequently associated with the first appearance of disease as in typhus. Nearly 100 years ago, in 1781, Dr. Heysham, of Carlisle, traced an outbreak of typhus in that town to overcrowding. In 1859 an epidemic of typhus was traced to the same cause in Edinburgh. Dr. Murchison, in his splendid work on fevers, attributes it to the same cause. The reports of the Dublin Sanitary Association also corroborate my own experience. So many instances of this kind have been recorded, and have been found to be the first beginning of typhus epidemics, that the conclusion is almost irresistible that overcrowding is sufficient to generate typhus *de novo*. The evidence is even still more conclusive, if possible, that typhoid or enteric fever is the direct product of food, drink, or air contaminated by the presence of decomposing sewage matter or by the miasma exhaled therefrom. The reports of the medical officers of the Privy Council give numerous instances of localised outbreaks of fever depending upon sewage contamination of water. Some of these are very remarkable, as in the case of Terling, Guilford, and Winterton.

We have an abundant supply of good water in Dublin, and if we use none other than Vartny water we have little to fear from that source; but it is probable that many persons in this city drink water obtained from pumps, wells, and so-called spais; and such a practice in a city like this, whose soil is so saturated with sewage matter as to have gained for it the unenviable but notorious sobriquet of "dirty" *par excellence*, is most dangerous. Another and most important source of enteric fever, and one that intimately affects us all, is our milk supply. Dr. Ballard has shown that an outbreak of enteric fever at Islington depended upon the sewage contamination of milk from a dairy-yard pump which had been used to increase the value of milk to the dairyman, at the expense of the health and lives of his customers. Of 2,000 families resident within a quarter of a mile radius of the dairy-yard, 142 were supplied with milk from this dairy,

and 70 were invaded with enteric fever within ten weeks. On examination Dr. Ballard found that the pump from which the milk was watered was contaminated by sewage infiltration into the tank which supplied the water. There is little doubt that many cases of fever and diarrhoea are produced in a similar way in Dublin. It is sincerely to be hoped that, Dr. Cameron's efforts notwithstanding, if our dairymen will persist in diluting our milk, they will restrict themselves to the Vartny water. Within the last few weeks Dr. Russell, the medical officer of health of Glasgow, has reported an outbreak of enteric fever in his district, and he has demonstrated that this outbreak was traceable to the distribution of infected milk from the house of a dairyman in which enteric fever prevailed. Out of 73 families supplied by this dairyman, in four streets where a milk census was taken, 22 had fever. 32 families supplied by this dairyman yielded 36 cases of fever. The fever was of a fatal type. Out of 46 families there were six deaths, while there were no deaths from it elsewhere. In two families so supplied the two individuals seized were the only members of the family who used the milk. The dates of sickening corresponded with the other indications pointing to this dairy as the source of infection. In conclusion, Dr. Russell remarks :—"I regard this as an extreme illustration of what most frequently happens where the sale of articles of food is conducted in close connection with families and all their attendant ailments. Milk is, from its composition, a peculiarly favourable medium for the propagation of the germs of disease, and particularly of enteric fever, and it is very likely that many apparently inexplicable outbreaks of enteric fever in families are caused by milk, or even solid food contaminated in the retail shops, especially among the poor. It is a very common practice in all parts of the city for parties to live and rear families in rooms behind shops, through which often the sole access lies, and in which groceries, milk, provisions of all kinds, sweetmeats, fruit, &c., are sold. These shops are 'served' by one or both parents, or by some grown-up child, and when infectious disease enters such a family, it cannot fail to be the source of quite peculiar risk to the public. I have been so much impressed with this by a series of cases in point, that I applied to Mr. Lang, the Procurator Fiscal, to ascertain what legal powers existed to deal with them." Mr. Lang writes his opinion that "persons situated as described in the various instances given in your letter have 'not proper lodging or accommodation.' It will, therefore, be possible by this and other provisions of the Public Health Act to deal with such cases, so as to save the poorer classes from the obvious dangers of contagious sickness in such circumstances. I have, therefore, issued to the sanitary inspectors an instruction, 'that systematic attention be paid to the health of all families living in the circumstances described, by a more routine visitation than from the character of the people and the locality might be thought necessary. Any case of infectious disease discovered must be specially and immediately reported to the medical officer. The greatest care is to be taken not to injure the interests of the parties referred to by unnecessary publicity in the discharge of this duty; but at the same time there is a very obvious danger to the public from their private sickness, arising from their mode of living, which quite warrants the interference of the department.' " The fatal activity of milk as a cause of disease has also been most carefully and scientifically investigated by Dr. Taylor, of Penrith; Dr. Bell, and Dr. Thorne. It has been conclusively shown that not only typhoid but smallpox, scarlatina, and even cholera, have been communicated to people through the medium of milk. It is, therefore, of the utmost importance to inquire into the sanitary condition of the cowsheds and dairy-yards. The following is a graphic description of the dairy-yards in the south side of the city, by Mr. Benson Baker, of London, who published some notes on a sanitary tour through Dublin about two years ago. Anyone who will take the trouble to investigate the matter now will find it equally applicable :—"In the most densely-populated and fever-infected district, in close vicinity to the Corporation manure depot in Marrowbone-lane, are to be found the cowsheds and dairy-yards of Dublin. These yards, like the neighbourhood, are abominably filthy; manure is allowed to accumulate in heaps, from which may be seen small black fetid streams flowing into the open streets. The effluvia from these yards is absolutely poisonous, and is only equalled by the atmosphere in the cowsheds. In this district man and beast alike fall easy victims to preventable disease." Speaking of the condition of the cows, he adds—"Dr. Cameron says that the loss from pleuro-pneumonia sustained by Dublin dairymen is at least 10 per cent., yet the dairymen cannot be convinced that the disease is contagious, and, there-

fore, unless under compulsion from the sanitary authorities, they never disinfect their premises after the removal of diseased beasts from them." "The vital powers of the cows are lowered by their constant respiration in close fetid stables. In some of the sheds the cubic space allowed for a large cow is less than the minimum—viz., 300 cubic feet of breathing room—allowed a man in a registered lodging-house. The cows were so close to each other that it was impossible that they could all lie down together. On questioning the owner on this point he facetiously replied, 'Gorra, sir, they take it turn about.' This repartee might excite a laugh if the occasion of it did not inflict cruelty on the beasts and tend to affect the people with disease. It is not surprising to learn that milk obtained from cows herded together in such unsanitary conditions, not only conveys foot-and-mouth disease, but typhoid and other zymotic diseases to the consumer." In Dr. Mapother's street list of cholera in 1866, kindly lent for the purpose of this lecture, many dairies are included as having been invaded by this disease. Dr. Reynolds has shown you how to distinguish good milk from bad in many ways, but unfortunately no means is as yet known for distinguishing milk poisoned by disease germs. The importance of a pure milk supply comes so directly home to every one of us, that it forms a sufficient apology for the length to which its discussion has been prolonged.

The requirements for the prevention of preventable disease are manifest, and may be thus summarised:—1. In building new towns or villages to select healthy sites. 2. Proper drainage, both house drainage and general drainage. 3. To prevent new houses being constructed on unsanitary principles. 4. To prevent overcrowding of either houses or districts. 5. To diminish the effects of pauperism by well-regulated charities, and by a proper system of poor-law relief. 6. The promotion of cleanliness both by education and legal means. 7. The provision of proper accommodation for the sick in suitable hospitals, having capabilities of expansion during periods of epidemic; proper conveyances for bringing patients to hospital; refuges for the healthy whilst their homes are being disinfected during epidemics; convalescent homes for the use of those recovering from zymotic disease, and an effective system of disinfection. To accomplish these ends there must be a well-organised sanitary system. Such a system exists but in few large towns, not at all in the country, and scarcely anything worthy of the name is at present to be found in Dublin. The treatment of the sick and the prevention of disease should be under the same department, and also the registration of births and deaths, and the performance of vaccination. These, owing to the intimate connection between disease and pauperism, should rest with the destitution authority, which is the Local Government Board. Each large district should be under a chief medical officer of health, and every dispensary medical officer should be the medical officer of health of his district, acting under the chief medical officer of health of the large district, whatever that area may be, whether a city containing over 20,000 inhabitants, or a county, or a combination of counties, as the case may be. The absurdity of placing the administration of sanitary matters under the absolute control of committees of town councils and poor-law guardians, many of them flagrant offenders against sanitary law, is so great that it will be at once perceived by every intelligent and thoughtful person.

CORRESPONDENCE.

"DAMP IN A SEASIDE HOUSE."

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The letters and articles in your able journal on the above subject are of the greatest interest, and of vital importance, especially in a humid climate like Ireland, and many a valuable life has been lost through inhabiting a damp house. See how many fatal cases occurred in Peabody's Buildings in London through the poor people going into them whilst damp.

It does not always follow that because a house is at the sea-side the mortar is made with sea-sand, but it is too often the case. I have found that, while the materials are new, the absorption of salt from the spray of the sea and from the air is far greater than anyone would imagine, and the pores get literally filled with it in time, and I do not believe it is possible to get it out. The best plan I find in such cases is to hermetically seal it there, so that the air shall not get to it and cause it to give again.

I have tried many different things for this purpose, and the only one that will resist the action of

the chloride of sodium (for it is this that eats away almost everything in the shape of paint it comes in contact with) is the one your correspondent recommended—viz., the enamelling paint of Mr. Thomas Griffiths, of Liverpool. It forms such a hard glazed surface, and nothing appears to attack it afterwards, and it has a most beautiful appearance. It should be put on the outside if possible, so that the wet cannot reach the salt in the walls. I have not seen any sign of damp upon my seaside property since I had it applied. Of course, we could use several other substances, such as pitch, black varnish, &c., but for the appearance. Yours truly,
A SURVEYOR.

An old subscriber, Mr. Thomas Fagan, writing to us from Lancashire, says:—"I suggest that the joints be well picked-out and saturated with boiled oil, and after neatly pointed with oil mastic." He states he has known walls of houses and churches where the treatment has had the desired effect, some of which were subjected to the process twenty years ago.

SEWAGE UTILIZATION AND LIFFEY PURIFICATION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—It would seem that the "masterly inactivity" displayed by your corporate authorities in reference to this matter, and the unaccountable delay in proceeding with the works of their grand drainage scheme, adopted and decided upon some years since, are likely to bring an unexpected and certainly undeserved reward in the prayers and hearty thanks of a grateful people, almost miraculously saved from a calamity which, at the present moment, threatens the whole of southern London—a fate as terrible as that visited upon Neapolitan cities, but infinitely more hideous in its accompaniments,—in other words, a deluge of sewage from the great intercepting drains through a failure in the supply of coal for working the pumping engines. Now it so happens that in the design for the Dublin Main Drainage Scheme three such pumping stations are proposed. Of course it would be very unreasonable to expect that the "coal question" difficulty could have entered into the consideration of Messrs. Bazalgette and Neville, when arranging their plans many years ago; but since, happily, Dublin has been mercifully spared the double infliction of spending her half-million or million of money, and having her citizens improved off the earth by a poisonous sewage flood. It might probably even now be worth the consideration how far the objects desired could be attained without these unpleasant attendant peculiarities of the adopted plan. Now, in 1867, in reply to an invitation of the Corporation, I submitted a plan for the purification of the Liffey (and which you did me the honour to publish at the time), the principle of which was an intercepting sewer on each side of the river, discharging at several places into filtering barges moored in docks formed under the side arches of the several bridges, enclosed by flood-gates so as to keep the vessels at a nearly uniform level. The sewage from the city being conveyed by a telescope pipe to the bottom of the barge and rising up through the filtering media of clay and lime placed between two removable decks or floors of perforated metal plates, the solid matter remaining below and the liquid portion passing off deodorised into the river. When the former would have filled up the hold of the vessel, her place would be taken by another boat with fresh filtering material, and the full barges towed down or up the river, or to the canals, and so up the country, where a market would be found for the valuable manure; or to depôts to be established on the line of either or both canals, where the matter could be deposited for further processes of manufacture or disposal, and where the barges would be prepared for returning to duty in the river. After the lapse of six years, I am still of opinion that my plan, or some modification of it, is not only feasible, but probably the most economical one that could be adopted, especially as from the fact that the intercepting sewers would have several points of discharge, the sectional areas might be small, and the depth and fall comparatively trifling. I am fortified in my opinion by the result of the experiments made by Dr. Cameron, City Analyst, and Dr. J. Emerson Reynolds, on a process for precipitating matters from, and at the same time deodorising, sewage.

At a meeting held last week in the Lecture Theatre of the Royal Dublin Society, Dr. Reynolds stated that the process in question had been examined by Dr. Cameron and himself, with a view to ascertain whether it was applicable to Dublin or not. The

process consisted in adding a very cheap and crude sulphate of aluminum to the sewage in the proportion of 4 cwt. per 100,000 gallons, and 2 cwt. slacked lime. A precipitate of aluminum is formed, and oxide of iron, both of which carry down a considerable proportion of the more valuable manures, the constituents of the sewage separates into two parts, the solid manure falling to the bottom, and a clear and considerably deodorised liquid floating. The manure is easily dried in rough kilns, and is *absolutely free from smell*. On analysis, it was found to be of value to the farmer at the rate of £1 9s. per ton. The process has been tried with the Dublin sewage, and found to yield very satisfactory results. It is recommended that a process of this kind should be employed in conjunction with an irrigation scheme, since though the affluent water had been purified as far as possible by every chemical process at present known, it still holds in solution substances which are useful for land, *but, being in an inoffensive condition*, it can be allowed to flow over land without any risk to the health of adjoining occupiers.

It appears from these experiments that, by an inexpensive process, and, singular to say, by the employment of the same materials which I suggested six years ago, the solid and valuable matters of the sewage can be rendered *absolutely free from smell*, and the liquid portion reduced to an *inoffensive condition*. If so, why not apply the process to the sewage in the city, without carrying it through six or seven miles of expensive main sewers to the country to be operated on, with the enormous and ever increasing cost of pumping to the higher levels at the several stations, and the chances of failure of machinery or other hitches, which may at any time occur when the removal is dependent on such mechanical contrivances?—I am, sir, your obedient servant,
THOMAS O'NEILL.

Cork, 14th April, 1873.

A BUILDERS FOREMEN'S ASSOCIATION.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—A number of young aspirants to a leading position in the building trade, as well as several who are competent to fill the important office of builders' foremen, have signified their willingness to form themselves into an association, with the idea of drawing together the scattered intelligence of this city connected with building, for purposes most commendable. The objects of the promoters are manifold, and the idea points to the establishment of an organization which would be of the greatest benefit to society as well as to the trade. Its founders look forward hopefully to the co-operation of the experienced, the assistance and patronage of architects and builders, the respect and confidence of its members, and the encouragement of the public. It is needless to say that at present those seeking the services of builders' foremen experience great difficulty in meeting with suitable persons, and often doubt and uneasiness respecting the capability of those whom they chance to employ. An association aiming at the supply of men stimulated by the example of earnest companions, trained in their respective branches, and instructed by one another during their leisure hours, would, the promoters hope, have a marked effect on the present mode of conducting building work, and be the means of establishing many a friendless though well-deserving man in the position which his talents entitle him to occupy.

Such an association would also tend to rouse the apathy of the indolent by pointing out the path which leads to the proper reward of application, steadiness, sobriety, and study, and by steadfastness in an honourable course silence the sneers of the selfish and sceptical.

The plan which its promoters have agreed upon as the first step is, to invite the active co-operation of the most intelligent and experienced of all branches of the building trade in which a foreman is generally required—namely, carpenters, bricklayers, masons, stone-cutters, &c., in order that the association may be capable of supplying and recommending to builders, &c., competent men in each branch or one of any of the above trades to undertake the duties of general foreman.

As this idea has only to be made known to be properly understood, those interested in the movement do not wish to occupy your space with further remarks at present concerning its future hopes and prospects, but whilst soliciting the support of the IRISH BUILDER, intimate their readiness to attend to all communications addressed to their secretary, and if their idea deserves the promised aid of "A Builder's Wife" and a "Retired Clerk of Works" whose letters appeared in your columns a short time since, they feel themselves in duty bound to accept it with grateful acknowledgments. Information of future meetings and plans of its

promoters may be obtained by addressing the secretary, Builders Foremen's Association, Mechanics' Institute, Lower Abbey-street, Dublin. Hoping that you will accord to us your valuable assistance by giving insertion to those few remarks, we are, &c.,
THE COMMITTEE.

Dublin, March 29, 1873.

SANITARY DOINGS.

SAVE some minor prosecutions in our police courts for nuisances, we cannot chronicle anything worth of civic vigilance. The Dublin Sanitary Association are commendably exerting themselves in the interest of the public health; but even in some of the bad cases that their officers have unearthed, and which have been brought under the attention of the Public Health Committee of the Corporation, no action has been taken. It is only right and proper that those who have been repeatedly warned should be punished for persisting in their wrong-doing. Nuisances must be removed at any cost where they exist in the city. The Corporation, however, should set a better example than it has been doing for years, and still continues to do, in respect to the scavenging of the streets and the accumulation of whatever dirt and filth its employes gather. There is so much scheming of a political, religious, and nondescript kind going on, that the citizens are left, as usual, to take care of themselves, while the leading corporators individually are doing the needful.

THE ROYAL HIBERNIAN ACADEMY EXHIBITION.

In our last number we noticed the few architectural drawings exhibited in Abbey-street this year. Since writing which Professor MacManus has read before the Architectural Association a most valuable history of art in Dublin, which appears *in extenso* in our last and present issues. In it he has shewn the very small encouragement held out to native talent, which is left to perish in obscurity whilst foreign trashy pictures are imported and sold to gentlemen for four or five times the price which they would offer were they produced by Irishmen; it is such treatment that has let Hogan die neglected in our midst, and driven Foley to seek encouragement in a country where a man of talent will receive an adequate reward for his labours. Of all artists, sculptors are treated the worst in this respect, as our readers are all well aware. Whenever a statue or memorial is to be erected, our patriotic fellow-countrymen generally pass over resident sculptors, and entrust their commissions to artists who, although they may be Irishmen, yet have ceased to have any claim on us, as our money in going to enrich them passes out of the country. Such has been the case from the days of Smyth till the present time, and we fear that it is useless to hope for better times, so as long as it is the fashion to decry everything national, and to look at foreign importations in art as the correct thing. The sculpture exhibited this year for the most part consists of busts. Mr. Thomas Farrell, R.H.A., exhibits a remarkable group "The Tarpeian Rock," which consists of two figures, the executioner and his victim whom he is in the act of hurling over the precipice. The stern determination depicted in his features, and the look of agony and despair in the face of the doomed one are triumphs of art. The helpless struggle of the one, and the strength exhibited in the well-knit muscles of the other are admirably contrasted. Mr. Farrell has added to his already well deserved reputation by this his latest effort. His brother, Mr. John Farrell, exhibits a model design for (we suppose) the O'Connell Monument, a glance at which reminded us of the disgraceful manner in which all the artists concerned have been treated with reference to this memorial. Fearing that our feelings might get the better of our discretion, we moved to another part of the room.

The easel pictures, as we remarked in our last number, are in point of number below

the average, but in quality are better than usual. (No. 2) "Kingstown Harbour during a Regatta," by Captain Beechey, calls to mind the familiar scene. The boats at the slip, the packets steaming through the harbour, and the yachts dressed out gaily with many-coloured bunting, the crowds on the Carlisle Pier, are all painted with the greatest faithfulness. Captain Beechey excels in neat pictures. "Head of an Apostle," (12), by R. Mannix, appears to be a study painted in a broad style worthy of imitation. The head, however, does not appear to have the venerable and devotional appearance which we would look for in an apostle. Mr. Mannix also exhibits a portrait (75 A), painted in the same free style that we would expect to see in a study by Michael Angelo or others of the Old Masters.

"New Jetty at Vat" (19), by T. de Bergue, and "Venice" (245), by the same artist, are painted with the utmost amount of clearness and brilliancy. The liquidity of the intensely blue sky and clearness of the atmosphere, are truly Italian, and are painted with the greatest fidelity.

No. 36,

"Men must work and women must weep
When there's little to earn and many to keep,"

is the title of a painting by the Hon. Louis Wingfield, R.H.A. "A Peep Behind the Scenes in a Circus." The circus is seen through the half open door of the green-room, with the expectant throng waiting for the appearance of the clown, who appears half undecided whether to leave his dying wife, who lies on a bed in the corner with her daughter kneeling weeping beside her. His little son, who is dressed in tights, takes him by the hand to lead him before the audience. No. 83, "Death and the Lady," and 84, "The Unsuccessful Minstrel," by the same artist, are apparently intended for decoration, for which purpose they are well suited. They remind us of the painting by Mr. Poynter in the Exhibition of '72, of "St. George and Fortitude."

No. 42, "Al Ghirah, Water Seller of Morocco," John Stirling, is very clever. The water seller, with his goat-skin bottle slung over his shoulder, is giving two children, a boy and a girl, a drink. The features are painted with the greatest fidelity.

No. 57, "The Orphan," by A. Burke, R.H.A., is an orphan girl in mourning, with sadness depicted in her face. She has evidently lost her best friend.

No. 108, "A Ballad Boy," by the same artist, is a portrait, we have no doubt, taken from life. The bright, open, but yet impudent face, ready for a joke, are no rarity in the class in this city.

No. 121, "The Toilet of a Lady of Ancient Rome," by C. W. Nicholls, R.H.A., is the leading picture in this Exhibition. The scene is a Roman lady's boudoir, with her attendant slaves, one of whom, by some awkwardness, has incurred her mistress's displeasure, which is manifested in the person of an African eunuch, who has administered with a whip several blows across the naked back of the unfortunate slave. She writhes with agony from the cruel blows, whilst the other slaves are transfixed with horror, and appear to fear that they themselves may at any moment be subjected to the same torture. The anger of the mistress and the stolid indifference of the eunuch are drawn to the life. The apartment with its decorations show that Mr. Nicholls thoroughly understands ancient Roman customs and decorations.

Mr. Jones, P.R.H.A., exhibits several portraits, which are very good indeed. Yet portrait painting can never be wholly satisfactory, the difficulties with which an artist has to contend are so great that it is only a Reynolds that can overcome them.

"Dalkey Island by Moonlight" (140), by Mr. Jones, is a very beautiful, though small, painting, every detail being shown with the greatest minuteness. Dalkey Island is a very favourite subject with painters. Our exhibitions every year contain several views of Dalkey Island and Killiney Bay.

No. 196, "At the Dripping Well," and 199, "Coming from the Well," by J. W. Boukett, are two truly beautiful pictures. The play of light on the features of the girl at the well is something wonderful.

There are many other pictures exhibited that, had we space, we would be glad to notice. We may say, however, that our Irish artists this year have made a very creditable show, and we hope that their efforts will be recognised, and that few will have to complain that their drawings have not been marked "sold" before the close of the exhibition.

IRISH COAL.

At a meeting of the Geological Society, held on the evening of Wednesday last, Professor E. Hull, the Director of the Geological Survey, in the chair, a paper was read by Mr. R. J. Cruise, M.R.I.A., on Irish coal. The object was to show, from a commercial point of view, the value of Lough Allen or Leitrim coal. Mr. Cruise said that—

Having engaged in surveying the district in connection with the Geological Survey, he had had considerable opportunity of examining the coal. The Connaught coal field is divided by Lough Allen, the Arigna district being on the west and the Slieve-an-Erin district on the east. From the coal of the Lough Allen Coal and Iron Company, in the Arigna district, the specimens he now produced had been taken, some of them by himself. They had been taken at three places, so as to afford an average of the quality of the coal of the district. There were three seams of coal, and of these only the middle one had hitherto been worked. The coal at present raised was rather of a brittle character, but it would become firmer when the work should be carried further into the seams, as evidenced by the quality of the specimens he now produced, taken from a lower depth than that at which at present the works were carried on. It was of a character between bituminous and anthracite. It did not ignite readily, but once lighted it made an excellent fire, burning with a steady heat. It did not contain sufficient volatile matter to enable it to be advantageously employed for the manufacture of gas, but could be very advantageously employed for iron smelting. It was not equal, as house coal, to the better varieties of English coal, but would not compare unfavourably with much of the coal imported into this country from England, Scotland, and Wales, while it was decidedly superior to some of them. It was much to be regretted that so extensive a tract of coal-bearing ground should be allowed to remain unworked up to the present time. The situation was favourable, the seams cropping out almost horizontally from the sides of the hill. The Slieve-an-Erin district, containing several thousand acres of coal-bearing strata, remained practically untouched. Labour was plentiful in the district; and the introduction of coal-cutting machinery and the establishment of wire tramways to convey the coal to the lough would materially diminish the cost of production. The following table showed an analysis of Welsh, English, and average Arigna coal respectively:—

	Welsh coal.	Newcastle coal.	Arigna coal.
Ash	9.41	9.12	8.88
Volatile matter	17.1	27.69	17.45
Coke	88.9	73.81	82.55

The chairman said he could corroborate Mr. Cruise's conclusion as to the Arigna coal. It was quiet equal to a great deal of the Scotch coal imported into this country, and might be compared with what was called second-class coal from England. Mr. Edwin was now ready, and in a position to turn out very large quantities of this coal whenever he should get a railway down from the works themselves to join the Midland Great Western Railway. That was the drawback existing at present, but as soon as the communication he referred to should be established, large quantities of coal could be sent into Dublin.

Mr. Emerson Reynolds asked whether the percentage of hydrogen and sulphur in the water had been ascertained?

Mr. Cruise said he had not had sufficient time at his disposal to make an analysis for that purpose, but he believed that the quantity of sulphur in the coal was extremely small, as evidenced by the very superior quality of the iron produced there in 1828 and 1830.

After some further discussion, the society then proceeded to deal with other matters, including the reading of an interesting paper by the president on the microscopic structure of the granite of Firibagh, county Galway, and the exhibition, by the president and Dr. E. Reynolds, of numerous rock sections by lamelight.

BOOKS RECEIVED.

The Ancient Church of St. Nicholas, Carrickfergus. Dublin: Ponsonby. Belfast: W. Erskine Mayne.

This interesting little brochure embodies a report to the Right Rev. Robert Knox, D.D., Lord Bishop of Down and Connor and Dromore, of the state of this ancient ecclesiastical structure, its alterations and changes in the past, and the plans proposed for its suitable restoration by the diocesan architect, Thomas Drew, R.H.A., F.R.I.A.I. The architect furnishes a fairly satisfactory account of the origin, history, and vicissitudes of the ancient edifice, and accompanies his description with three well-engraved plans. Plan A exhibits the work as at present. Plan B gives the church as Mr. Drew conjectures it to have existed in the fourteenth century, and plan C exhibits a possible restoration. The frontispiece is an inside view, showing the church restored with existing clustered columns. We will probably, in an early issue, offer a few observations in detail in respect to the ancient church of St. Nicholas and of other matters anent Carrickfergus.

HOME AND FOREIGN NOTES.

THE CHAPEL-OAK OF ALLOUVILLE (PAYS DE CAUX).—This very remarkable tree is a specimen of the common oak (*quercus pedunculata*), which is believed to be about 1,000 years old, and is the object of a considerable amount of veneration to the inhabitants of the district, from the circumstance that its hollow trunk has long been used as a chapel. Properly speaking, it contains two chapels, one above the other, access to the upper one being obtained by means of a spiral staircase on the outside. Over the entrance into the lower chapel is the following inscription: "A Notre-Dame-de-la-Paix, érigée par M. l'abbé du Detroit, en 1696." The tree is now about 50 feet high, its top having been broken by the wind, or cut off, at some remote period, and in its place a sort of bell-tower has been erected, the top of which is about on a level with the highest branches. The lower part of the trunk is more than 11 feet in diameter. The bark, which is of a corky nature and deeply fissured, is upwards of four inches in thickness. Although so very old and hollow, the tree still exhibits a vigorous growth, its huge branches, which extend over an area of 2,478 square yards, being annually covered with an abundant foliage, and usually bearing a large quantity of acorns. The extraordinary age of this venerable tree renders it impossible to obtain any particulars of its early history. Local tradition, however, states that the district was formerly covered by a natural oak forest, of which the Chapel-Oak of Allouville is now the sole survivor.—*Garden.*

RAILWAY CARRIAGES FOR LONG JOURNEYS.—The well-known French firm of Desouches, David and Co., Pantin, near Paris, are about to become the exponents of a new system of carriage-construction for long through-transit by rail, based upon that which has for some years been in operation in America. The cars now being prepared are built upon the model of the Eastern of France Railway carriages, being intended for the through route from Paris to Vienna during the Universal Exhibition at the latter city. They will belong to a private company, and be provided with special attendants, apart from the railway companies' officials. Each carriage is intended for twelve passengers only, that being the number of beds made up. Sanitary, lavatory, and toilet compartments and appliances are to be provided; and one of the three compartments into which the car is divided is to be devoted to ladies, or separate travelling parties, as may be required. The cars will, it is understood, be heated by *briquettes*, on the German system, and a certain limited provision for refreshments will be made.—*Iron.*

The diver at the Docks, West Hartlepool, on one occasion, when repairing a cavity in the dock gate cill, used some quick-setting cement under water at a depth of 18 ft. Having completed a part of the work he happened to stand with one foot on the cement with his lead shod shoe, and found, after a space of about three minutes, that it was impossible to move his foot; in order to release himself he was obliged to take his knife and cut away the straps of his shoe, which still remained fast in the cement.

THE GUILDHALL LIBRARY.—The New Library and Museum at Guildhall, London, erected at very great expense by the Corporation, has been opened for the free use of the public. The library itself contains accommodation for between 50 and 60 readers at a time, and one of the twelve bays into which it is divided is set apart for ladies. There are between 30,000 and 40,000 volumes on the shelves, and the library abounds especially in works referring to the history and traditions of the City. There is a public reading-room, where dictionaries, directories, guide books, maps, atlases, and commercial and legal works are kept for quick reference by merchants, clerks, and others who may need them. The building will be open daily from 10 until 5 throughout the year, with the exception of the ordinary public holidays, and a few days before and after the great civic ceremonials in November. Each reader is required to give his or her name and address on entering the room, and the way in which books are obtained and returned is exactly similar to that in vogue at the British Museum.

AN EPIGRAM.

(With a *Locus Standi*.)

When Nature to Patrick a language was giving
For concealing his thoughts, which he oft needs to quench,
She said, "When on Cork-hill you talk for your living
Mind and square all your acts by your knowledge of French!
Printer's Devil."

[Our "devil" perpetrated the above during his dinner-hour on Saturday last. We print it as a salutary warning to the young rascal that he may do better the next time, or beware of the "stick."]

TENDERS.

For the erection of three cottages at Warrenpoint, County Down, for Mr. Crossen. Mr. W. James Watson, architect:—

Rantin	£317
Wheelan	315
M'Shane and Lavery	303

For the erection of new flour mills at Newry, County Down, for Messrs. Sinclair and Son. Mr. W. James Watson, C.E., architect:—

M'Laughlin and Harvey	£5,700 0s.
Wheelan	4,600 0
M'Shane and Lavery	4,483 18
Rantin	4,480 0
Collen, Brothers	4,249 0
O'Hare	3,365 0

For alterations and additions to spinning mills at Newry, County Down, for Mr. A. Wilson. Mr. W. James Watson, C.E., architect:—

O'Hare	£5,250
M'Shane and Lavery	4,468
Rantin	4,250
Wheelan	3,900
Collen, Brothers	2,800

Iron columns and girders—

Lucas and Son	£895 10s.
The Newry Foundry Company	885 0

TO CORRESPONDENTS.

EXTENSION OF THE TRAMWAY SYSTEM.—A twin-line from Bolton-street to Swords will in course of time be a necessity. It would scarcely be a paying experiment at present. As an instalment, a line might be laid down as far as Drumcondra or Santry, with very good profit, as buildings would soon be commenced from the accommodation afforded for reaching the northern suburbs. The Centaur line might also throw off a branch at Marino Crescent, for Donnycarney, Artane, and Raheny respectively, with fair chances of success in course of time.

THE LYING-IN HOSPITAL AND ROTUNDO.—Richard Castle, or Cassels, was the architect of the hospital building, but there is some doubt about the authorship of the latter. The Rotundo, however, is generally attributed to a George Ensor, but Johnston was the architect of some subsequent additions in connection.

SIR RICHARD MORRISON, ARCHITECT.—Information is wanted concerning the practice of the late Sir Richard Morrison, and of the Morrison family generally; also of his descendants or pupils, if any, still living.

BULLY'S ACRE.—The old cemetery known by the above title, as also the "Hospital Fields," was closed at the time of the first great cholera outbreak in 1832. When it may have first received its common title, we cannot say. Perhaps some old citizen reader will answer.

SARAH BRIDGE.—This bridge, at "Island Bridge," received its name from Sarah, Countess of Westmoreland, the wife of the Lord Lieutenant of Ireland at the time it was built.

A BUILDER.—Scrabo stone may be used as a substitute for Portland. The best descriptions of it have been used for ornamental purposes with very good effect.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

"A VISIT TO EPPE'S COCOA MANUFACTORY."—Through the kindness of Messrs. Eppe, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Eppe, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet labelled—"JAMES EPPE & CO., Homoeopathic Chemists, London." Also, makers of Eppe's Cocoa, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAONE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Eppe and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

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The Irish Builder.

VOL. XIV.—No. 321.

*The Strength of Building Materials.**

THIRD NOTICE.



N advocating technical education for the masses in our workshops, and particularly for those connected with the building trades, it must not be lost sight of that there is a large body of workers in our mines and quarries who stand in need of the same help as that about being rendered to their brethren. As knowledge is power, the want of it must be weakness; as information is a gain, ignorance must be a loss. So, from the machinist to the mere farm labourer, education must move concurrently, to be really useful and beneficial to the nation. When the farmer and the farm labourer understand a little more about the nature of soils and the science their cultivation embodies, husbandry will take its proper place amongst the industrial arts, and the position of the labourer will be dignified. In every walk of industrial life, therefore, an increase of knowledge is an increase of wealth and strength; and where there is not an increase of health at the same time, there must be something wrong. From the soil and from under the soil come the elements of our greatest wealth—yea, all our wealth, animal, vegetable, and mineral. The materials of the edifices we erect upon the earth come off or from beneath the earth—clays, sands, cements, bricks, stones, timber, iron, &c.; and the workers in each are uneducated until they understand both theoretically and practically the constituent elements of these materials, and the principles on which their application to the arts depend. The roughest stone in the quarry, the commonest brick in the brick-field, the most ordinary timber tree that the forest yields, are severally not only mere materials to be utilised, but they are all materials which should be understood that they may be properly utilised. A workman can never feel really interested in his trade until he finds an interest in studying the history, formation, growth, and the elements of the materials he uses in the practice of his trade.

In the work under notice some very interesting and valuable facts are given respecting both the nature of building materials as well as the crushing strength and working load, permanent working strain and temporary working strain. In respect to timber, we have both the English, American, and French practice placed before us clearly. At Landore Viaduct, the work of the late Mr. Brunel, constructed of creosoted American pine in compression with wrought iron in tension, the timber was calculated to bear 878 lbs. per square inch, though in some parts of the structure the strain was allowed to reach 560 lbs., or 50 per cent. more. The

Innoshannon bridge is instanced by Mr. Stoney—a lattice timber bridge erected by Mr. Nixon on the Cork and Bandon Railway. Here the ordinary working strains on the flanges were 484 lbs. compression, and 847 lbs. tension, per square inch. At the end of sixteen years this bridge became so decayed as to be unsafe, and it was replaced by a wrought iron structure in 1862.

Now for American practice, where large timber bridges are common, General Haupt, a distinguished American engineer, "has not considered it safe to assign more than 800 lbs. per square inch as a permanent load, and 1,000 as an accidental load." In a paper read by Mr. Moss in 1863 at the Institution of Civil Engineers, it is stated that about 900 lbs. per square inch is usually considered by American engineers to be the limit of safe compression for timber framing. The two French authorities, Navier and Morin, recommend that the working strain of timber should not exceed 1-10th of the breaking strain. Mr. Stoney considers this rule a safe practice, owing to the liability to decay in timber structures exposed to the weather; but under cover, 1-8th of the breaking strain is considered a safe working load. For temporary purposes a strain of 1-4th of the breaking weight is thought safe, provided there are no shocks; and Mr. Barlow is quoted in reference to the tensile strain. He "left more than 3-4ths of the whole weight hanging for 24 or 48 hours without perceiving the least change in the state of the fibres, or any diminution of their ultimate strength." Speaking of transverse strains, Tredgold, in his work on Carpentry, states that "1-5th of the breaking weight causes the deflection to increase with time, and finally produces a permanent set."

The life of timber bridges is not of very long duration, though we have had a few remarkable structures built of timber which shewed, like many of our mediæval timber roofs, remarkable ingenuity in their construction. Since the railway era commenced there have not been many remarkable timber structures; and what there have been, have only been constructed for temporary purposes. The timber bridges erected across rivers in Ireland down to the close of the last century were, many of them, strong; but in the great majority of them mere bulk of material was provided to meet any extraordinary strain, and little scientific calculation was entered into. Two or three (perhaps more) timber bridges were erected towards the close of the last century by a Mr. Cox, a native of Boston, in America. The bridge over the Suir at Waterford is one of these. It does not show any remarkable ingenuity in its design, and, though repaired often, it is existing at present in a very feeble state. George Semple, the architect of Essex Bridge, designed several timber structures of very good design, some of which were never carried out. The bridges of Cox, we believe, were afterwards substituted for those originally designed by Semple. Some interesting facts about bridge-building in general and Essex Bridge in particular, with plans, will be found in a work written by Semple, entitled "Building in Water." This rare old work will possess an interest now that Essex Bridge is undergoing some alterations.

According to Mr. Moss, as cited in Mr. Stoney's book, the American timber bridges do not last in good condition more than twelve or fifteen years. This comes from the fact

of all these bridges being hurriedly put up, and being composed of green or unseasoned timber, which shrunk to a great extent after being framed. When covered to protect them from the weather, they are otherwise, for, when "cared for, any shrinkages of the braces being immediately remedied, it is believed these bridges will remain in good condition double the usual time, or about 25 years." There are timber bridges on the Continent which have lasted, with proper care, twice the above period, though exposed to weather in all seasons. The risk that timber bridges run from fire is great, and in times of war several fine bridges have often been blown up or hewn down with little trouble.

It is laid down as a rule that the working load on piles depends more upon the nature of the ground than upon the actual strength of the timber. Piles beneath or bedded between masonry do not, of course, support more than a portion of the superstructure raised above them. It is then difficult to say how much weight the piles support, and how much the soil surrounding them. Mr. Stoney cites the case of the high-level bridge at Newcastle, erected by Mr. R. Stephenson. The piles in the foundations were 40 ft. long, and were driven down through sand and gravel till they met the solid rock. One of these foundation piles was tested with a load of 150 tons, which was allowed to remain several days; on removal no settlement of any kind had taken place. These piles are 4 ft. from centre to centre, filled in between with concrete made of broken stone and Roman cement, and the utmost pressure that can come upon a single pile is 70 tons, supposing none of the weight to be carried by the intervening planking and concrete. In laying the foundations of Essex Bridge, Dublin, in the last century, Semple, as may be seen in his book alluded to above, accomplished his piling foundations in a very substantial manner, considering the mechanical appliances that were at that period available. He drove his piles deep, filled in with broken or irregular stone, and was not stint in the use of grout. He experienced great difficulties, but overcame them by perseverance. The modern race of engineers had not sprung into existence then, and architects in this island were few and far between. The piles in the Royal Border Bridge over the Tweed, erected by Mr. Stephenson in 1850, are American elm, and are driven from 80 ft. to 40 ft. into gravel and sand. The pressure on each of these is about 70 tons, not taking into account the support derived from the intervening soil. Mr. Stoney considers this the severest load on piles known, or at least that he has found recorded.

Speaking of this last case, our author says:—"Assuming the piles in these two instances to be 15 in. square, and that no part of the weight was supported by the ground between the piles, the pressure does not exceed $\frac{70}{15^2} = 45$ tons per square foot, or 700 lbs. per square inch; if, however, the piles were only 12 in. square, the pressure is nearly 1,100 lbs. per square inch." Some of the uprights in the lofty scaffolding on which the land spans of the Britannia Bridge were built carried 28 tons per square foot, or 485½ lbs. per square inch; but, according to Clarke, the horizontal timbers were somewhat compressed under their load. The working load on timber piles surrounded

* "The Theory of Strains in Girders and Similar Structures, with Observations on the application of Theory to Practice, and Tables of Strength and other Properties of Materials." By Bland B. Stoney, M.A., M. Inst. C.E. New Edition. London: Longmans, Green, and Co.

on all sides by the ground seems to vary a good deal according to circumstances. According to Rondelet, the variation is from 427 lbs. to 498 lbs. per square inch; and, according to Professor Rankine, "it appears from practical examples that the limits of the safe load on piles are as follows:—For piles driven till they reach the firm ground, 1,000 lbs. per square inch of area of head (= 64·8 tons per square foot). For piles standing in soft ground by friction, 200 lbs. per square inch of area of head (= 12·85 tons per square foot)."

In the opinion of Mr. Stoney, Prof. Rankine's rule is based upon sound principles, and he adds:—"The nature of the ground, and the resistance which it offers to the penetration of the piles, have generally more to do with their safe working load than the strength of the timber has. As far as the latter alone is concerned, we might safely load piles surrounded by the ground with 1·5th of the crushing weight of wet timbers, which, according to Hodgkinson's experiments, is equivalent to a load of about 1·10th of the crushing weight of dry timber. When, however, loaded piles project above the surface of the ground, they act in the capacity of pillars, and their strength accordingly should exceed that of piles surrounded by earth. The safe working load of timber at right angles to the grain is about one-third of that lengthways. For instance, 800 lbs. per square inch is a sufficient load for pine or for cross sleepers; and if we estimate that the pressure from the driving wheel is equal to 8 tons when the engine is running, the bearing surface of the rail in a cross-sleeper road should not be less than from 50 to 60 in. Three-fourths of this will probably be sufficient, if the sleepers are made of hard wood. A similar rule applies to timber wall-plates, such as those which support the ends of girders."

The above conclusions appear to be perfectly sound, and based upon good reasoning. In addition, they have both experiments and experience in their favour. We wish we could turn the attention of our young workmen to the study of this subject. As many of them may become master builders in course of time, the knowledge of the facts we have been discussing will be of the greatest use to them. There yet remains a good deal to say respecting foundations, stone, brick, masonry and concrete, and in the interest of builders and workmen we will return to the subject again.

OUR FUTURE CITY AND SUBURBAN IMPROVEMENTS.

THERE are many needful and desirable improvements which, in the interest of the city and the county, should be carried out as soon as possible. Some of these are urgent, but there are others which, though not of such pressing character, yet their accomplishment would be hailed with satisfaction by the great majority of the population. To wait on or to expect that the Corporation of our city, under its present constitution, will carry out a tithe of these improvements, amounts of course to a delusion—the advent of the Greek calends is nearly as certain. We want in this city a body constituted similar to the Metropolitan Board of Works in London, but under a distinct act, and more responsible for their doings, so that no im-

provements may be undertaken but such as are clearly advisable or necessary. There is at present, north and south of Dublin, as well as within the city, such a large class of work which will require to be undertaken in the future, that we hardly know to which we ought to direct attention. By all means let city improvements be completed first; some of these we have already pointed out.

Among the works of the future will have to be included the reclamation not only of the portion of the strand between the Dublin and Drogheda Railway and the Annesley Bridge-road, Fairview, and Marino Crescent, but that much larger area beyond the railway extending to the Patent Slip. It is not a new idea to advocate the continuation of the Church-road across the strand to the Clontarf road. From Marino Crescent to the break-water at the North Bull there is a large expanse of strand absolute waste land, which is only covered by very shallow water at the influx of the tide, and the sandbank of the North Bull itself should be included in the reclamation. To advocate this reclamation of strand will, we know, be to provoke an opposition and a cry on the part of the dwellers along the sea-board. To convert a large portion of Clontarf strand into green pasture or park would be most desirable. The question of erecting marine crescents or squares upon any portion of this reclaimed strand is a matter for discussion.

A time must come when the historic "Green Lanes" of Clontarf and Dollymount will have to be pushed seaward, and in our opinion it will be an advantage, if people will only consider it in a right light. Such an improvement will by no means deprive the sea-board of Clontarf of its sea breeze, but will add to the health and beauty of the northern suburbs. The present aspect of Clontarf strand when the tide is out is anything but pleasant.

It may be worth remarking here that as far back as 150 years ago a canal from Sutton cutting through the isthmus at Howth was agitated in this city. Subsequently, a canal was spoken of from Dalkey to the Grand Canal Docks; and one from Malahide, to be carried under Lissenhall Bridge, proceeding into the interior of the country. The advent of the railway system of course knocked on the head the carrying out of any of these canal projects.

During the last years of the Irish Parliament a number of improvements were projected in the north portion of our city. The buildings of the North Circular-road were commenced, and Russell-street was intended as a continuation of Fitzgibbon-street. The building of Jones's Bridge and the opening up of Jones's-road were owing to the spirit of Frederick Jones, the lessee of old Crow-street Theatre. Jones's mansion at Clonliffe was known as Fortick's Grove; and a lane from Ballybough Bridge, called Fortick's-lane, led towards it. Fortick's Grove was called after its owner Tristram Fortick, whose mansion and garden were once celebrated in his day, and also when Jones was proprietor. An asylum, founded by Tristram Fortick, still exists as a charity in Denmark-street.

A continuation of Russell-street, across Jones's-road and the grounds at Clonliffe, was once mooted, and is still desirable. This road would cross the River Tolka at Richmond, and join the Goosegreen road near "Drumcondra Castle." From Mount-

joy-square a very healthful suburban neighbourhood would be easy of access if this improvement was carried out. Drumcondra has witnessed but little improvement since the close of the last century. Drumcondra Hill was cut down, and the roadway made level before the commencement of the present century. The village itself has decayed year after year, instead of having improved. The erection of the missionary college and buildings does not seem to have increased the activity of the neighbourhood, or to have led to the erection of any buildings worthy of even passing notice. The neighbourhood is, notwithstanding, a most healthful one, and during the eighteenth century it contained many resident noblemen and commoners of note, among whom were Lord Chancellor Lifford and the Earl of Charleville.

Not only are many of the city thoroughfares in bad order, but the approaches to the city, north and south, are most irregular. Men and horses both suffer from bad roads; but when they are steep as well as bad, it is little less than cruelty to animals to drive or work them upon them. The recent lowering of Newcomen Bridge has considerably lessened the evil upon that road, but at Clarke's Bridge the ascent up Foster-street is very trying upon heavily-loaded horses. The construction of the canal originally led to the evil, but it could be lessened, and the Corporation should see to it. Within the city there still exists Cork-hill, which would not be tolerated by the citizens of London for one week, yet its improvement has formed the theme of innumerable debates these last thirty years. The new street here ought to be commenced at once, and prosecuted speedily to completion. A road from Stephen's-green to St. Patrick's Cathedral—a continuation of York-street—should also be commenced. A very slight amount of demolition would suffice to carry this needed thoroughfare into effect. We are certain it would be a boon, and a great improvement. The improvement and free opening of our public squares are touched upon elsewhere in our columns. In the matter of our river bridges, it will not be out of place here to indicate another improvement, the want of which is felt, and will need attention in view of the growing traffic on each side of the Liffey. The alteration of Essex or the enlargement of Carlisle bridges will not obviate the necessity that exists for constructing a new bridge to span the river near the Custom House. The shipping will have to be pushed back, down the river; and a new connection with both sides of the city effected, as both passenger and vehicular traffic demand it.

The city has, properly speaking, no direct radial arteries, the best of them being zig-zag. All of them seem to have shaped themselves in conformity with the old proverb—"The longest way round is the shortest way home." Our longest thoroughfares or routes not only undulate greatly on their surface, but siderally corrugate and curve at places not nearly right angles. Long lanes that have no turn would seem to be held in utter contempt, particularly in our suburban neighbourhoods, where there are any number of proverbial "Love-lanes," which would not be resorted to so much if they were straight. The course of true love, we know, never did run smooth; so our lanes, city and suburban, are of a pattern, though many of them differ as to healthiness—the suburban certainly

having the advantage in respect to the latter. There is a network of close and narrow streets and courts in the Coombe and Liberties district, and also in that quarter situated between Capel-street and Smithfield, which needs enlarged openings to be driven through in the interest of the lives of the inhabitants not only of those quarters, but in the interest of the lives of our citizens generally. In these quarters are the hotbeds of fever and disease, ill-drained houses, unsewered lanes and alleys, haunts of misery, vice, and inevitable crime. Purity is almost rendered impossible in such neighbourhoods, and to expect robust health would be to expect a miracle.

We have indicated a few necessary improvements,—some urgent, others less so;—but one and all calling for the attention of our executive, the local authorities, and the public in general.

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD E. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

THE CISTERCIAN ORDER, AND THEIR CHURCHES.

It is probable that Cormac's Chapel was one of the last, if not the last, church of any importance erected in Ireland whose arrangements, construction, and details were in accordance with the traditions of native architecture.

Up to this period (A.D. 1184) the sacred edifices appear to have been planned of very limited dimensions; this fact is confirmed by the unquestionable evidence of existing examples. The stone-roofed church at Killaloe is 29 ft. by 17 ft. in clear of walls. The nave of the principal church of Inniscatra, 30 ft. 6 in. by 20 ft.; that of the Nuns' Church at Clonmacnoise, 36 ft. by 19 ft.; Temple Finghin, 28 ft. 10 in. by 14 ft. 6 in.; the Ivy Church at Glendalough, 32 ft. by 19 ft. 9 in.; the Refeart Church, 29 ft. by 17 ft.; St. Saviour's Church, 41 ft. by 20 ft. 8 in.; and the Trinity Church, 29 ft. 6 in. by 17 ft. 6 in. The Cathedral is of larger size, but has been so altered and added to, that its original dimensions can scarcely be ascertained; the same may be said of the Cathedral at Clonmacnoise, but in a greater degree, as there is scarcely a bit of the original work remaining, except the western doorway. St. Colum's at Kells is 19 ft. by 15 ft. 5 in. The original church of Tomgraney was 38 ft. by 20 ft. 6 in., clear of walls; it was, however, lengthened by an addition of about 37 ft. The cathedrals at Ardmore, Scatterry, and Kilmacduagh have been ancient churches, enlarged in the thirteenth and fourteenth centuries.

The above examples, taken from the most important ecclesiastical localities in our island, bear out the fact, that up to the first quarter of the twelfth century the size of our churches seldom exceeded 40 ft. by 20 ft., in clear of walls, and that the great majority of the ordinary structures were much under these dimensions. By reference to the section on Oratories and Primitive Churches it will be seen, that such edifices could contain no congregation, and were merely used for preserving the altar, sacred utensils, vestments, books, &c., while the people were ministered to standing outside. It will also be remarked that none of the churches erected before the twelfth century were provided with either sedilia, piscina, or credence—adjuncts considered so requisite in mediæval times.

The small dimensions of our churches up to the middle of the twelfth century has been a puzzle to the architectural antiquary. I cannot account for it upon any other grounds than the strong predilection which our Gaedhelic architects had for that national covering, the stone roof, and which they seem

to have held to with great tenacity. In the construction of that of Cormac's Chapel they seem to have strained their resources to the utmost; and so nicely have they balanced the weight of the roofing against the scantling and resistance of the walls, that there is no appearance of thrust or settlement whatsoever. But beyond a span of 20 ft. or 21 ft. they evidently could not go, without an enormous waste of labour and materials; consequently, when larger churches were required, on the introduction of the foreign religious orders, which in the middle of the twelfth century began to multiply in Ireland, the old system of roof-construction had to be abandoned.

There can be no question but that the great improvement which took place in Irish ecclesiastical architecture, in the middle of the twelfth century, must be attributed to the introduction of the Cistercian Order into Ireland. Previous to this, the religious communities formed in our island appear to have been distinct from the foreign orders, their rules and discipline having been instituted by the saints and fathers of their own native church. In the early part of that century a very remarkable and distinguished ecclesiastic appeared in the Church of Ireland, whose zeal, energy, and perseverance accomplished a very remarkable change in the religious affairs of our island: I allude to St. Malachy O'Morgair. This eminent churchman was born at Armagh about A.D. 1093; his parents, who were of the Patrician Order, had him educated with great care, and, having powerful natural talents, he made a rapid progress in the literary knowledge then attainable. For further instruction in theology, he was placed under the tuition of Imar O'Aedhecan, a holy priest, scribe, and ascetic, who occupied an oratory adjoining the church of Armagh. About 1120, he appears to have entered into holy orders, and in 1123 he paid a visit to Malchus, or Malachias, Bishop of Lismore. During his sojourn here, occurred the expulsion of Cormac Mac Carthaigh from the throne of Cashel, and his enforced exile at Lismore, where it is stated he formed the acquaintance of our saint, who became his spiritual adviser. We next find him at Bangor, in the County Down, erecting an oratory or church of wood; this incident I much doubt, as I think it will be admitted, after what I have written, that it was exceedingly improbable that a travelled ecclesiastic like St. Malachy, who had visited the great centres of religious action, as Armagh, Lismore, and Cashel, would have contented himself with a wooden conventicle in that ancient seat of religion and learning. We next find him elevated to the See of Connor, which, however, he occupied but a short time, being driven therefrom by an invasion of that district under the King of Ulster. We next find him erecting a monastery in Munster, on a grant of land made to him by his old friend Cormac Mac Carthaigh. Dr. Lanigan states he took with him from Bangor one hundred and twenty monks. These events appear to have taken place about 1127-8.

After the death of Ceallach, Metropolitan of Armagh, his kinsman Muircheartach Mac Donnell ascended the archiepiscopal chair. In 1132, the majority of the bishops being dissatisfied with his administration, elected St. Malachy as primate, who proceeded—reluctantly, it appears—to Armagh, but did not enter the city, contenting himself with taking up his abode outside the walls, and there exercising his spiritual functions.

The character of Muircheartach has been much blackened by ecclesiastical writers; he does not, however, appear to have been a bad or a vindictive man, else he would not have suffered a rival to exercise a spiritual jurisdiction outside his very gates. After his death, which took place in A.D. 1184, his relative Niall attempted to get possession of the primatial chair; but St. Malachy, being supported by the bishops and leading toparchs, who were determined to put an end to this family succession, was unanimously elected, and made his entry into the

metropolitan city in the latter end of the same year. This position he appears to have held but a short time, as we find Gelasius appointed primate in 1186, and St. Malachy assuming the inferior position of bishop of Down.

Having with great energy and perseverance effected many valuable reforms in his diocese, and arranged its affairs, he departed in 1188 on his long-projected visit to Rome. On the outward journey he sojourned for a short space at the celebrated abbey of Clairvaux, in Compeigne, then under the government of its distinguished founder, St. Bernard. This visit was the occasion of a firm and affectionate friendship being cemented between these great men. On arriving at Rome he was well received by Pope Innocent the Second, with whom he had frequent conferences on the state of religion in Ireland. It has been asserted by some, that St. Malachy did not perform the part of the patriot priest on this occasion, and that he gave a very disparaging account of his countrymen to his Holiness. Be this as it may, he returned from Rome laden with honours, having been appointed Apostolic Legate for all Ireland.

On his homeward journey he again visited his friend St. Bernard at Clairvaux, by whom he was persuaded to introduce the Cistercian Order into Ireland. This fraternity is so named from its first house, founded at Cistercium, or Cîteaux, by St. Robert, Abbot of Molesin, in A.D. 1098. Clairvaux, or Clara-Vallis, was a daughter of the above, founded by St. Bernard in A.D. 1115. This order spread in a most remarkable manner; it counted five hundred well-endowed abbeys within fifty years of its institution. It was the first foreign order introduced into Ireland, and was the means of making quite a revolution in her church architecture.

St. Malachy, having arranged with his friend St. Bernard the introduction of this order into Ireland, on his return sent a number of postulants to be inducted and instructed in its rules, &c. When the period of their probation was accomplished, they returned to Ireland, accompanied by a small number of Gaulish monks; these appear to have been established in A.D. 1142 at Mellifont, in the present County of Louth, then known as Oirghialla, where a grant of land was made to them, and ample assistance given for the erection of a monastery, by the reigning toparch, Donough O'Carroll, as we find by the following passage quoted by Dr. Petrie from the Usher collection of MSS. (*Round Towers*, p. 394):—"It was this great king who founded the entire monastery, both stone and wood, and gave land and territory to it, for the prosperity of his soul, and in honour of Paul and Peter."

The following list of Cistercian houses, with the dates of their foundation and names of their founders, is taken from Harris's edition of *Ware's Antiquities*:—

"Monaster-Evin, County Kildare, founded by Dermot O'Dempsey, Prince of Offaly, in A.D. 1178, dedicated to the B.V.M. and St. Benedict.

"Baltinglass, or De Valle Salutis, in the County Wicklow, an abbey of the B.V.M., founded in 1148 or 1151 by Dermot McMurrrough, King of Leinster.

"Dunbrody, in the County Wexford, an abbey of the B.V.M., founded in 1182 by Hervy de Monte Marisco.

"Tintern, in the County Wexford, an abbey of the B.V.M., founded in 1200 by William Mareschal, sen., Earl of Pembroke.

"Donske, usually called Graigue-na-Managh, in the County Kilkenny, founded also by William Mareschal, in 1207. It was also named the Abbey of Vale St. Saviour's.

"Kilkenny, also de Vale Dei, an abbey of the B.V.M., County Kilkenny, founded in 1171 by Dermot O'Ryan; united to Donske in 1227.

"Jerpont, in the same county, an abbey of the B.V.M., founded in 1180 by Donald, a chief of Ossory.

"Leix, or de Lege Dei, Queen's County, an abbey of the B.V.M., founded in 1183 by Conogher O'Moor.

"Beaubec, or De Bello-Becco, in the County Meath, an abbey of the B.V.M., founded in the thirteenth century by Walter Lacy, as a Benedictine cell to Bec, in Normandy; afterwards a Cistercian cell to the abbey of Furness, in Lancashire (fourteenth century), by purchase.

"Bective, or De Beatitudine, in the same county, an abbey of the B.V.M., founded between 1146 and 1151 by Murchard O'Melaghlin, Prince of Meath.

"Kilbegain, also De Flumine Dei, County Westmeath, an abbey of the B.V.M., founded by the Daltons about 1200.

"Granard, or Lerha, near Granard, County Longford, an abbey of the B.V.M., founded about 1210 by Sir Richard Tuite.

"Shroul, in the same county, an abbey of the B.V.M., founded by an O'Farrel in 1150 or 1152.

"Mellifont, in the County Louth, an abbey of the B.V.M., founded by Donat O'Carrol, a petty prince of Ergal, in 1142.

"Comeror, or Comber, in the County Down, an abbey of the B.V.M., founded by the Whites in 1199.

"Inis, in the same county, an abbey of the B.V.M., translated from Erynach or Carrig, founded by John de Courcey in 1180 or 1188.

"Leigh, or De Jugo Dei (vulgo, Grey Abbey), in the same county, an abbey of the B.V.M., founded by Africa, wife to John de Courcey, and daughter of Godred, King of Man.

"Newry, or De Viridi Ligno, in the same county, an abbey of the B.V.M. and St. Patrick, founded by Maurice McLoughlin, King of Ireland, in 1157.

"Moycoscain, or De Claro Fonte, County Derry, an abbey of the B.V.M., founder unknown; date, 1218 or 1228.

"Ashro, or Casrua, or De Samario, County Donegal, an abbey of the B.V.M., founded by an O'Cananan in 1179 or 1184.

"Hilfothuir, in the same county, founded by an O'Dogherty in 1194, subsequently united to Easrua.

"Chore, or De Choro St. Benedicti, now Midleton, in the County Cork, an abbey of the B.V.M., founded by De Barri in 1180.

"Fermoy, or De Castro Dei, in the same county, an abbey of the B.V.M., founded by the Roches, 1170.

"Maur, or De Fonte Vivo, in the same county, an abbey of the B.V.M., founded by Dermot McCormac McCarthy, King of Desmond, in 1172.

"Inch Rie, in the same county, a cell to Maur.

"Tracton, or De Albo Tracto, in the same county, an abbey of the B.V.M., founded by the Mc Carthies in 1224.

"Nenay, or De Magio, in the County Limerick, an abbey of the B.V.M., founded by an O'Brien in 1148 or 1151.

"Woney, or Wotheny, in the same county, an abbey of the B.V.M., founded by Theobald Walter in 1189 and 1205.

"Kilshane, or Kilsonna, in the same county, a cell to Corcumroe, in Clare, founded in 1198.

"Feal, or Ne-Feal, in the same county, a cell to Nenay, founded in 1188.

"Hore, near Cashel, County Tipperary, an abbey of the B.V.M., founded by David Mac Carwil, Archbishop of Cashel, in 1172.

"Holy Cross, in the same county, an abbey of the B.V.M., founded by Donald O'Brien, King of Limerick, in 1182.

"Inislaunacht, or De Surio, in the same county, an abbey of the B.V.M., founded by the same monarch in 1184.

"Kilcoal, or De Arvi Campo, in the same county, an abbey of the B.V.M., founded by Donat, son to Donald O'Brien, in 1200.

"Odorney, or Kyri Elysion, in the County Kerry, an abbey of the B.V.M., supposed to have been founded by the Fitzmaurices, but upon no sufficient evidence. Ware fixes the date at 1154; Keating, at 1161. The latter is the more probable.

"Corcumroe, or De Petra Fertili, in the County Clare, an abbey of the B.V.M., founded in 1200 by Donald O'Brien and his son Donat.

"Knockmoy, or De Colle Victoriæ, in the County Galway, an abbey of the B.V.M., founded by Cathal Croodearg O'Connor, King of Connaught, in 1189 or 1190.

"Cleary, or Clare Island, same county, a cell to Knockmoy, founded 1224.

"Athlone, County Roscommon, an abbey of SS. Peter and Benedict; founder unknown; date, 1150.

"Boyle, County Roscommon, an abbey of the B.V.M., founded first at Grellechdine, in 1148; removed to Drumconaid, afterwards to Bunfinney, and finally to Boyle, in 1161."

Ware, who is followed by Archdal, states that St. Mary's Abbey, in Dublin, was founded by the Danes in 948 for Benedictines, and was re-founded by the Cistercian Order in 1189; it is, however, quite evident from the lives of SS. Malachy and Bernard that the order did not make their appearance in Ireland before 1142, and that Mellifont was the first house founded by them. Dr. Lanigan has clearly established this fact, and remarks:—"Therefore what Ware has (*ib. at Dublin*), and which he took from the *Annals of Mary's Abbey*, viz. that this abbey adopted the Cistercian rule in 1189, in imitation of the abbot of Savonac or Savigni in France, cannot be true; whereas there were no Cistercians in Ireland until three years after that date. Besides, the abbey of Savigni was not Cistercian itself until 1148."—(*Ecccl. Hist.*, vol. iv., p. 119.)

Of the above-named abbeys, some remains exist of the following:—

Ballinglass.—Some portions of the abbey church, in the Romanesque and First Pointed styles.

Dunbrody.—Nearly the entire of the abbey church, and considerable remains of the conventual buildings. The church is of Early Pointed character, with Second Pointed insertions.

Intern.—Small portions of the abbey church, in the First Pointed style.

Jerpont.—The principal part of the abbey church and considerable remains of the conventual buildings, the latter in a very ruinous state. The church is of the twelfth century, shewing some good Romanesque details, with fourteenth and fifteenth century additions.

Bective.—Some remains of the conventual buildings, which appear to have been fortified; also a portion of the cloister screen, of Third Pointed work; no remains of the church.

Mellifont.—It is to be regretted that the abbey church and conventual buildings have disappeared, excepting a portion of an octagonal building supposed to have been a baptistery, shewing interesting Romanesque details; also a small building in the Second Pointed style.

Grey Abbey.—Here we have considerable portions of the abbey church and some trifling remains of the conventual buildings; the church was in the First Pointed style.

Nenay (now called Monaster Nenagh).—Some portions of the abbey church, of Transition character, shewing some fine Romanesque detail.

Hore Abbey.—Some considerable remains of the church, in the First Pointed style, with Second Pointed additions and insertions.

Holycross.—Nearly the entire of the abbey church, in the Second Pointed style, shewing some very fine details, and considerable remains of the conventual buildings.

Kilcoul (now known as Kilcooly).—The principal part of the abbey church, in the Second Pointed style, with some later insertions, and some small remains of the conventual buildings.

O'Dorney (now Abbeydorney).—Some remains of the abbey church, shewing Third Pointed work.

Corcumroe.—Some remains of the abbey church, principally the chancel and side chapels, shewing Transition work.

Knockmoy.—Some remains of the abbey church, shewing First and Second Pointed work.

Boyle.—Considerable remains of the abbey church erected in 1161; the nave in the Romanesque style, the chancel and side

chapels in the First Pointed, of very pure character; also some trifling remains of the conventual buildings.

From the above details it will be observed that many of the Cistercian churches exhibit Romanesque work, principally confined to the nave and aisles of the respective buildings; the chancel and side chapels being usually First Pointed, the towers generally Second or Third Pointed. It is quite evident that, from the struggling circumstances of the order in Ireland at the time of their introduction, they were generally unable to erect a complete church at once, as they were planned upon a much grander scale than had been hitherto attempted in Ireland. Hence we find the naves at Boyle and Monaster Nenagh exhibiting Romanesque details, while the chancels and chapels are Early Pointed, or have even Second Pointed insertions. At Jerpoint traces of a Romanesque triplet are to be seen in the chancel, though a Second Pointed window has been inserted, proving unmistakably that in this case the entire church had been erected within the twelfth century. Holycross was rebuilt in the fourteenth century; every trace of the original Romanesque church has disappeared with the exception of one round-headed doorway, having jamb-shafts with carved caps, which has been preserved and built into a portion of the present church. There is no doubt that these edifices were planned by the Gaulish monks from Clairvaux; and we have evidence that at least one person skilled in building was sent by St. Bernard to St. Malachy, in the following passage from a letter written by the former to the latter:—"We send back to you, your dearly beloved son and ours, Christian, as fully instructed as was possible, in those rules which regard our Order, hoping, moreover, that he will henceforth prove solicitous, regarding their observance. . . . Our dearly beloved brother, Robert, like a truly obedient son, hath also complied with our wishes, on this occasion. It will be your province, to assist him, that he may be able to promote the interest of your family, both by building, and in all other necessary works."—(*O'Hanlon's Life of St. Malachy O'Morgair*, p. 89.)

MELLIFONT.

There can be no question that the first house founded by the Cistercian Order in Ireland was that at Mellifont, somewhere about A.D. 1140-42. The monks consisted of a certain number of pious disciples whom St. Malachy had sent to St. Bernard, by whom they were instructed in the rules of the order, and who had returned to Ireland accompanied by a few French brethren, to assist them in their first attempt, Christian O'Connarchy being appointed their first superior.

In 1142, Donough O'Carrol, toparch of the principality of Oighrial, or Oriel, made a grant of land to the new fraternity, in order that they might erect an abbey thereon, and he otherwise assisted them in their undertaking, endowing the newly-erected house with a suitable provision for the support of its inmates. In 1150, the abbot Christian was created bishop of Lismore.

The following annals are taken from Archdal's *Monasticon*:—"1157.—A great synod was held here for the purpose of consecrating the church, at which were present, the Archbishop of Armagh, then Apostolic Legate, and divers other princes and bishops; on this occasion many rich grants were made to the abbey, particularly by Murchertach O'Lochlann, King of Ireland, who presented one hundred and forty oxen or cows, sixty ounces of gold, and a townland near Drogheda called Finnabhur Naininghean, and by O'Kearuill, Prince of Uriell, sixty ounces of gold. Devorgilla, wife to Tigernan O'Rourke, Prince of Breffny, gave sixty ounces of gold, with a chalice of the same metal, for the high altar, and presented holy furniture for nine other altars in the same church.

"1168.—Prince Donough, the founder, died this year, and was interred here.

"1189.—Murchard O'Carrol, King of Uriell,

died here, and was interred near to the founder.

"1198.—This year Dervorgilla, wife to Tigernach O'Rourke, died in this abbey.

"Same year the reliques of St. Malachy, Archbishop of Armagh, were brought from Clairvaux into Ireland, and received with great honour in this abbey, and in other houses of the Cistercian Order.

"1822.—It was determined that no person whatsoever should be admitted into this abbey before he had taken an oath that he was not of English descent.

"1870.—John Terrour was chosen abbot, and was indicted this year for remitting to the Abbot of Clairvaux the sum of forty marks by the hands of friar John Brayn.

"1878.—The said abbot was indicted for killing John White, a monk of this abbey, in the year 1867; the jury acquitted him.

"1880.—It was enacted in parliament, that no mere Irishman should be permitted to make his profession in the abbey.

"1840.—Richard Couter was the last abbot, and this year, on the 10th of September, an annual pension of £40 was granted to him for life."

At the period of the dissolution of religious houses in Ireland, this abbey was in possession of 2,545 acres of the best land in Louth and Meath, and the tithes of a large district of country, with a number of salmon-weirs, rights of fishery, and a variety of other valuable privileges, including "the tithes, alterages, works, and customs of the tenants." The abbey had, however, at a former period been much wealthier, but successive monarchs had from time to time been taking away some of their possessions and privileges. The abbots sat as lords of parliament.

The abbey of Mellifont was erected in a lonely and sequestered valley in the Barony of Ferrard, and County of Louth; the locality is about five miles from Drogheda, and about one and a-half miles from the banks of the Boyne; through the valley runs the Mattock, a small tributary to the great river. The Cistercian Order sought such secluded spots for the erection of their houses. Of the great church of the abbey, commenced in 1142, and consecrated in 1157, there are now no remains, but all ancient authorities concur in representing this house and all its adjuncts as being on a scale far superior both in size and magnificence to anything previously conceived in Ireland. Unfortunately but very trifling remains of these at present remain: the abbey church has entirely disappeared, but a few fragments of walls of the conventual buildings exist, a portion of the once noble baptistery, and the remains of an ornate building usually called the Chapel of St. Bernard, with a mediæval gateway, include all that now remains of this once famous foundation.

THE BAPTISTERY.

This fragment has been variously appropriated; by some writers it has been named a *chapter-house*, by others a *baptistery*; there can be no doubt that the latter is its proper designation. It was an octagonal building 24 ft. 4 in. in its internal diameter, its walls being 2 ft. 7 in. thick. Each side of the octagon was 11 ft. 6 in. on its external face, and contained a doorway of very elaborate character. These doorways are each 4 ft. 9 in. in clear, and are semicircular-headed; the jambs consist of very elaborate mouldings, of a transitional character, but unmistakably tending to the Early English, and an engaged pillar 6½ in. in diameter, with richly-carved caps and moulded bases; the caps are of very chaste and beautiful design, being of transition character, with a strong Early English tendency; four only of the caps are perfect, the rest are much worn and mutilated; birds are represented in the foliage of some of these caps. The abacus of the door pillar forms an impost to the entire jamb, and is continued on the piers of the building, internally and externally.

The arch-mouldings of the doors are of very elaborate character; the external quoins are moulded, the internal angles are enriched

with curiously-moulded shafts, having richly-carved capitals, from which started the original quoin-ribs, portions of which still remain at the springings. Above the arched entrances ran a horizontal moulding or cornice, which determines the first storey of the edifice, the walling of which is faced with fine well-jointed ashlar-work, of rather small size. Above the cornice there is at present the half of a second storey, built of rude rubble-work, with a window in each face, very rude and plain. At present but four sides of the octagon remain standing; the rest have disappeared.

There can be no doubt but that this was a baptistery; its octagon form, with an open archway in each side, is sufficient evidence for such an appropriation, for these apses were not windows, as they are continued to the ground, neither are they actual doorways, as there are no reveals to the apses, and no appearance of any preparation for the hanging of a door, and there was no mode of admitting light other than by the open archways.

The upper storey is evidently modern, from the character of the work and from the window-opes. Whether there was originally a chamber above the groining of the ground storey, cannot now be positively asserted; yet I think there must have been, as from the very moderate thickness of the existing walls, and the absence of buttresses, they could not have stood the thrust of the groining; we must therefore presume that they had been raised sufficiently high as by their weight to counterbalance such a thrust. It was probably finished by a pyramidal roof springing from an eave-cornice.

The dressings and ornamental portions are very finely cut; the material a pale buff-coloured freestone. It has been stated that this material is not to be found in the district, and that it was imported from France. The nearest native freestone is to be found in the northern part of the adjoining county of Meath; whether it is of the same geological character as that used at Mellifont, I have had no opportunity of judging. It is not at all surprising that the foreign monks sent by St. Bernard to assist in the erection of this abbey should have preferred such a material as they were accustomed to see used in their own country; and there is no doubt that the importation of the material from Caen, or other ports in Normandy, would not be attended with more cost and difficulty than the transportation of the same quantity from the Meath quarries, at a period when all heavy goods were carried on horses' backs, and roads few and far between.

The earliest author who notices this building is Mr. James Wright, who in 1758 published his *Louthiana*. He gives in the third book of this work a plate by Fourdrinier, which is a very fair representation, and appears to have been done to scale. It shews the eight sides of the octagon, as then perfect. In the short letterpress notice of this plate, he states that it was "also sold, and to be taken away."

Our next notice will be found in the second volume of *The Antiquities of Ireland*, published under the name of Grose, in 1798. In this work we find a view of the baptistery and a plan of the same. The view is an indifferent one, and shews only four sides of the structure standing, which fact is alluded to by the author in the text; so that what Wright had stated came partially to pass, as the other four sides had been taken down and removed, but where to is not recorded.

A very interesting description of the remains at Mellifont was published by an humble but talented antiquary, Mr. Robert Armstrong, in the first volume of *The Dublin Penny Journal*, p. 250, with a faithful view of the interior of the building known as the "Chapel of St. Bernard." Mr. Armstrong's accurate description of this place has been frequently pilfered from by succeeding writers, without the slightest acknowledgment.

The detached baptistery is specially an Italian feature, and must have been introduced at a very early period; it marks the

importance attached to this rite by the early church. These structures were usually either octagonal or circular on plan, ranging from 40 ft. to 160 ft. in diameter, containing an internal arcade of piers, or pillars, crowned by a horizontal architrave, or cornice, as in the early examples, or supporting a series of arches, as in the later ones; the central space was crowned by a dome, while the surrounding aisle was usually vaulted. Though generally detached, they were sometimes connected with the church by a vestibule or covered passage.

Some of the early round churches were turned into baptisteries. From existing remains it would appear that they were very general in Italy up to the twelfth century. The northern churches do not seem to have adopted this feature to any extent, as north of the Alps we find but very few examples of the detached baptistery. The Lateran baptistery within the walls of Rome is of the age of Constantine; it is an octagon of 65 ft. diameter out and out of walls. That of St. John, in the ancient city of Ravenna, is also an octagon of 40 ft. diameter; its date is supposed to be the sixth century. St. Lorenzo, at Milan, of the sixth or seventh century, is also octagonal, 45 ft. in diameter; it is joined to the southern apse of the church by a spacious vestibule with apsidal ends. That at Nocera del Pagani is a circular structure about 80 ft. in diameter; it has a fine dome of masonry springing from semicircular arches, which are supported by fifteen pairs of columns, which are coupled on lines radiating from the centre; its date is supposed to be the fifth century. There is a very fine octagonal baptistery at the western end of the atrium of the cathedral at Novara, and a circular one at Asti, both probably of the eleventh century. The cathedral of Pisa has a magnificent detached structure of this class, circular on plan, and 100 ft. in diameter; it was designed by Diotti Salvi in the twelfth century, but was not finally completed until the fourteenth.

The above examples will suffice to shew the character of the structure at Mellifont, which, though not on such a scale of grandeur as those above described, being but 30 ft. in diameter out and out, was yet a building of considerable merit, designed in a pure taste, and executed of excellent workmanship and materials. The vandal act which destroyed this beautiful building is deeply to be regretted. Let us hope that the fragment which remains of the only detached baptistery in the British Isles will be preserved from further mutilation.

At Mellifont is a richly-finished apartment commonly called the "Chapel of St. Bernard." This is an error; it is not an ecclesiastical but a domestic structure, as over it is an apartment with a fireplace and other secular features. It is groined, and shews some very good fourteenth-century detail, with Irish peculiarities. As it does not come within the range of my present investigations, I will reserve its illustration for a future period.

ELECTRIC LIGHT IMPROVEMENTS.

PUBLIC attention is directed at present to an improved machine by Gramme, brought to London by Mr. Weddermann, and at present on view at Messrs. Whielden and Cooke's engineering works at Westminster. By a new and peculiar arrangement, the magneto-electric light produced is continuous, and as a consequence there are no sparks or development of heat in the new machine. Driven at the rate of 400 revolutions per minute, it has a power equal to 500 Bunsen's cells, and a light is said to be produced equal to 15,000 candle power, at a cost of one shilling per hour. In addition to its use as an illuminating power, it is proposed to employ the machine in various manufactures, such as in the preparation of pure steel and caustic alkali. A great saving, it is thought, will be effected, as also a vast improvement in the quality of the manufactured articles. A series of experi-

ments with the machine have been carried out, including a spectrum analysis of several metals, in which the great power of the machine has been shown by the production of certain unknown lines in the spectrum. It would appear from what is above stated that electricity is yet only in its infant state, and that undreamed of marvels are yet in store for us in the wide field of electricity in its application in generating light and power.

It is upwards of forty years since the late Professor Faraday discovered that an electric spark could be produced by the sudden separation of a coiled keeper from a permanent magnet. Machines afterwards were produced in London and Paris by Pixii and Saxtin, the year after Faraday's discovery, and since that time until the present several improvements have taken place. In 1858-9 a machine devised by Professor Holmes was employed at the South Foreland Lighthouse in producing a very effective artificial light. Other countries have to some extent, we believe, adopted this system of illumination for the protection of their coasts. We will be pleased to hear that the present improvements, after a practical trial, have proved successful.

PREVENTION OF RAILWAY ACCIDENTS.

THE report from the Select Committee of the House of Lords and the Regulation of Railways (Prevention of Accidents Bill) is published, together with the proceedings of the Committee, minutes of evidence, and the appendix. The whole comprises a blue-book of about 170 pages. As the subject is of great public importance, we give a summary of it. There is a general concurrence of opinion amongst the witnesses in favour of the block system on all important railways which carry passengers. The block system and the interlocking system are not necessarily connected, but the union of the two systems is strongly recommended on all important lines of railway. It may be confidently stated that the general safety of railway travelling would be increased by the more extensive employment of the block and of the interlocking systems. Railway companies have, during the last five years, paid £2,348,000 in compensations for injury to passengers and goods, and therefore have a direct pecuniary interest in rendering their lines safe. The evidence taken by the committee proves that railway companies are now making increased exertions to introduce both the block system and the system of interlocking. The bill provides that these systems shall be universally adopted on all railways within five years from the present time. Relying on the great exertions recently and very generally made by different railway companies to extend the block and interlocking systems, and the improvements now in progress, the committee recommended that the bill should not be proceeded with during the present session. They recommend, however, that the Board of Trade should call for such information as may enable the inspectors in their annual reports to state specially the progress in their adoption on all passenger lines. Parliament will then be in a condition to decide whether or not it would be right to require the further and more prompt extension of these systems on those lines where they are necessary.

Serious railway accidents are happily not of so frequent occurrence in this country as in England. This may be accounted for probably by the fact that the traffic on Irish railways is not nearly so great as in the sister kingdom. This affords no reason, however, why the block system should not be adopted here on lines where there is a quick succession of trains, or where the system of sidings is adopted to allow the fast trains to pass. Our slow trains are often very slow and behind time, and this is the case with luggage trains also. Many of our railway accidents take place by the collision of

passenger and mail trains with luggage ones. The block system would render these collisions almost impossible.

CIVIC LYRICS.—No. XXXVI.

THE RESURRECTION OF HUMPHREY SCRIVEN.
A.D. 1850-70.

Once upon a morning mellow, when I lodged at Portobello,
I felt a curious feeling that I sometimes felt before;
For I loved for board and lodging, gained through gentlemanly
dodging
That my landlady ungrudging very wonderfully bore—
With an unexampled patience, like a noble matron, bore,
On my promise—nothing more!

Of distinctly she reminded, but still, with pleas long-winded,
I kept promising that shortly I would wipe out her score;
Yet the clouds began to thicken, and my heart commenced to
sicken,
For I felt my hopes were stricken, like the seedy clothes I
wore—
Like my hat, and gloves, and boots, and the swallow-tail I
wore

Threadbare—and nothing more!

As my coffee I was sipping, with my crust of bread and drip-
ping,
I was startled by a hurried knock, quite post-like, at the door;
And next I heard a stumbling on the stairs, and voices
grumbling,
And then amid the rumbling I thought that some one swore.
My kind, forgiving landlady, though ruffled, never swore.
I felt uneasy—nothing more!

I stole out upon the landing, and, from a look commanding,
I beheld a corded package which some coat of arms bore.
"There is something here initial," said I, "of jobs official,
Or of briefs extra judicial"; and I felt refreshed all o'er.
Like a hunchback who had lost his lump, I felt quite light
all o'er—

I thought I did—and nothing more!

Back into my chamber flying, and before the mirror eyeing,
My necktie I adjusted quick, while watching still the door,
At which I heard a tapping, like a gentle lady rapping—
A very gentle rapping, with an echo and encore;
With a soft, good-natured rapping, which I could myself
encore

In expectation—nothing more!

"Come in, come in!" I muttered; but the words I scarcely
uttered
When two whiskered gentlemen strode straight across the
floor.
I will pass o'er their saluting as a thing not worth em-
balm-ing,
For soon there came a calming when we talked the business
o'er.
The very urgent business that they came on we talked o'er
Like business men—nothing more!

"The Council needs your service, Mr. Scriven; don't feel
nervous.
The accounts are in disorder!—a thing we all deplore;
And the members, in confusion, are whispering of collusion.
But they showed the same delusion many times before.
There's a method in their madness now—a thing unknown
before.

It proves them mad—nothing more!

"List, our Chairman's got a licking; so he's grown tired of
sticking
To the seat of honour, where he shewed his legal lore.
And our Engineer is hourly, like our Town Clerk, getting
poorly.
All from over work come surely these misfortunes sore.
Severe indisposition brings these misfortunes sore—
Just that, and nothing more!

"So now, dear Mr. Scriven, from the hints that we have
given,
You understand just what we want from what we have talked
o'er.
Here's a cheque, as tonic ointment, to be followed by appoint-
ment;
We know by long disappointment you have suffered in the core,
But there's balm in Gilead and a kernal in each core."
I agreed, and nothing more!

When my visitors departed I felt quite lion-hearted,
And the packet I unrolled its mysteries to explore.
There were vouchers quite a legion which had suffered from
contagion,
And some were from a region whose cancel-marks they bore—
Ugly black crasures of some clumsy pens they bore;
They told a tale—nothing more!

For three months, night and morning—all outside pleasures
scorning—
I kept at work, at chaos, though I cursed oft-times and swore;
Yet my audit was perfected, and the vouchers all corrected,
Though errors I detected some five thousand and a score;
But that job got me elected and wiped out my old score.
I'm a PUBLIC MAN—nothing more!

CIVIL.

DAMP.

THE causes which produce damp in existing buildings are oftentimes so puzzling to the inexperienced, that they frequently arrive at the opinion that it is useless to try further remedy. Having tried so many without success, they begin to think they may as well reconcile themselves to what they cannot cure. To a certain extent we adopt this idea, because if a house is built (and more particularly at the seaside) without the ordinary precautions being taken which will produce dryness, and without perfect knowledge of the geological character of the stone of which its walls are constructed, failure is sure to occur.

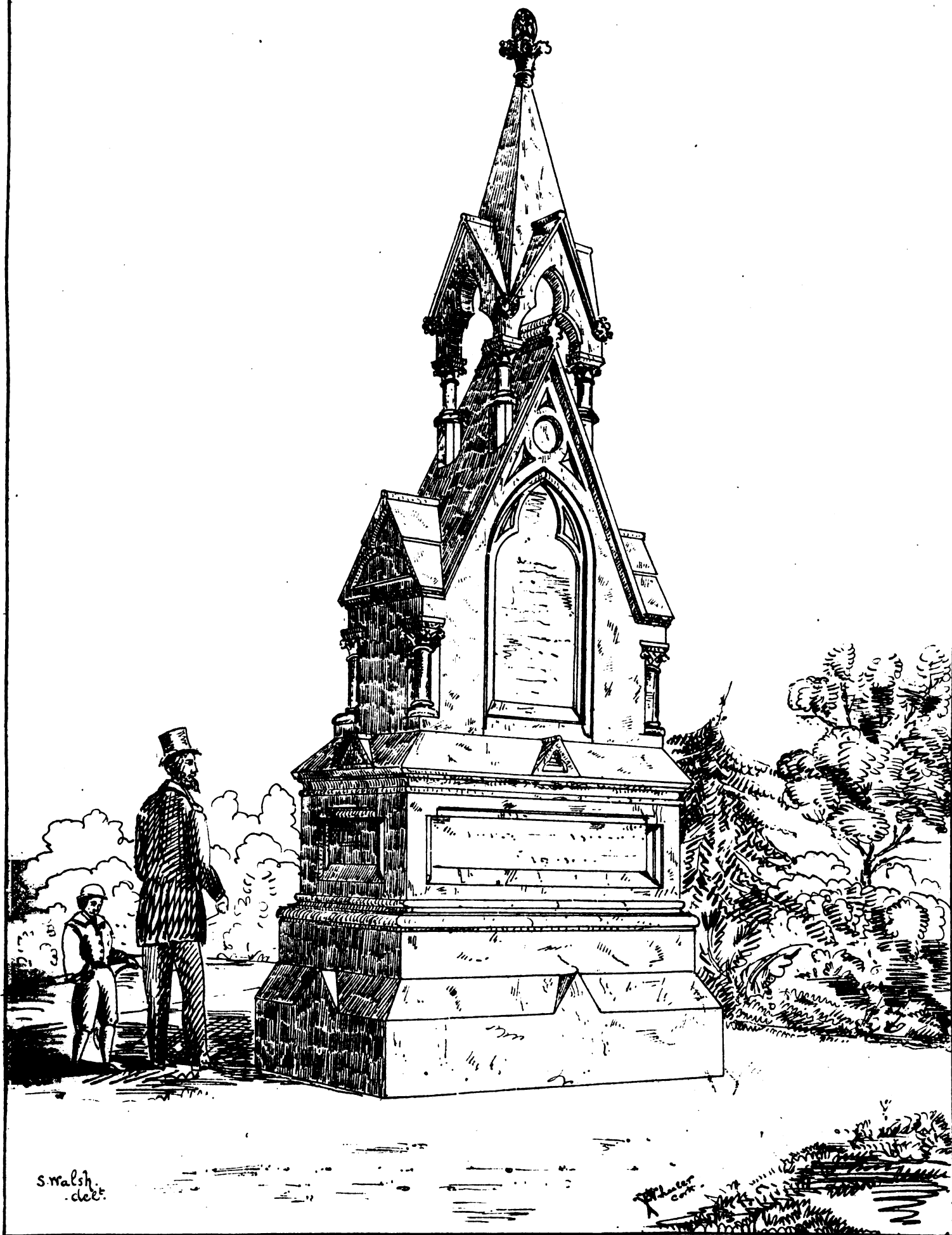
With regard to domestic buildings, the locality always decides the material of its walls. Where bricks are moderate in price, they will perhaps be preferred; or stone and brick will be combined together. But while stone abounds in every county, it frequently occurs the long carriage upon bricks adds so much to their cost as to necessitate their use in the smallest possible quantity; and therefore the precaution of lining the external walls with them—which is absolutely necessary with many descriptions of stone—becomes so expensive as nearly to amount to prohibition.

Several letters referring to communications of our correspondents with regard to "Damp in a Seaside House" having reached us, in order to give a general reply to all we would refer the writers to a paper by one of our valued contributors which appeared in this journal May 1, 1871, which treats on the subject of damp in all its varieties, and particularly shewing that it should not exist in buildings where proper attention has been paid to what every country mason ought to know—that is, well-built walls.

Seaside houses are generally built of stone. In few instances is there occasion to line the walls with brick, because granite and the softer limestones abound upon our coast line; but no doubt during the winter months damp will exist (we use the term advisedly) even in those of the best possible construction, unless during that season the precaution is taken of having occasional fires lighted in the several apartments. Thus this, what is called damp, is controllable, because it is entirely atmospheric, and not arising from extraneous sources or leakages. The air, being loaded with vapour, penetrates internally and becomes condensed upon all surfaces which are unequal to absorb it as rapidly as it enters; while upon non-absorbent surfaces, as oil-painted walls, it will run down in streams. Where this is permitted to continue, the walls become mildewed. But if a house is properly built with well-hearted walls, either of granite, sandstone, or the more porous limestones—avoiding the use of stone of close or very compact texture, such as calp* or the harder limestones, and using river or good bank sand in the composition of the mortar, the walls when finished being carefully cemented or composed over on the exterior, the material of which being made up with sea sand of a proper degree of sharpness,—there is no reason why a house built at the seaside (with the exception we have above given) should not be as thoroughly free from damp as a house built several miles inland.

It frequently occurs that river sand or even good bank sand is difficult to procure near the sea shore (we will omit the use of sea sand internally, which all practical men must

* All stone of very close texture, consequently of non-absorbent nature, will produce damp walls, no matter how carefully they may have been built. This damp is not admitted from the outside, but produced by the condensation of the atmosphere upon the interior surfaces, as we have shewn, and appears most previous to and during the continuance of wet weather. There is no cure for this, except by battening and lathing and plastering the walls inside. However, we know of a building near Dublin erected entirely of calp (because no other stone was procurable, except at enormous expense), the walls of which are of considerable thickness, thus affording opportunity for the exercise of the talent of the ingenious architect; and by his taking the precaution of constructing numerous air-fires at intervals from the foundation to the eave-course, with gratings above and below, the building is perfectly dry in the most moist weather, and by this means he saved his clients the expense of lining the walls with brick; but this is not always practicable.



MONUMENT TO COLONEL HICKMAN R.A. AT CORK.

BY MR. SAMUEL MURPHY.

condemn), and the consequence generally is that the house is built with a loamy material, which, however well it might assist in raising potatoes, is totally unfitted for the composition of mortar or the raising of a house, and the natural result is that every joint in the exterior walls becomes a medium for conducting external damp to the inside. In addition to this, it is more than probable that the centre of the wall is carelessly filled in with spawls, no attention being paid to its hearting; and here we have the true secret of damp in seaside houses, for no matter how well the exterior jointing or compoeing may be effected, the merest pin hole in it will introduce damp to an incalculable extent.

We could extend these remarks much further in shewing how well-prepared mortar is re-converted into carbonate of lime, thus forming one impervious mass of stone in a well-built wall, and rendering it hermetically sealed against damp; but we have given papers upon this subject more than once, and we feel it unnecessary here to reproduce them.

MONUMENT TO COL. HICKMAN, R.A., CORK.

It has been our pleasing duty for some time past to record the great activity which prevails throughout the south of Ireland in all branches of the building trade, in view of which we have made arrangements for illustrating from time to time some of the works recently executed and in progress in and about the "beautiful city."

Our portfolio contains at present several sketches, from amongst which we select one—a monument just erected in the new Cemetery of St. Fin Bar's, Cork, by Philip Bass, Esq., to the memory of the late Colonel Hickman, Royal Artillery, of St. Alban's, Monkstown. The composition is most effective and pleasing, and the execution is simply perfect. The materials employed are local limestone and marble.

The work was designed and executed by Mr. Samuel Murphy, of Mary-street, Cork.

NOTES FROM DERRY.

THE business premises of Messrs. M'Gowan and Lane have undergone a complete change. Their offices at Ship-quay have put on "holiday attire," and present an appearance both of tastefulness in design and adaptation to their purpose. Messrs. M'Gowan and Lane have succeeded in erecting a substantial and costly building, which fully sustains the enterprising reputation of the firm. The building is three storeys high, about 75 ft. in height. The façade presents an imposing appearance to the river; it is composed principally of Belfast pressed brick, the windows and doors being arched with black Staffordshire brick. Separating each storey, and surrounding the reveals and jambs of the gates, &c., bands and other ornamental works are formed with Dungannon freestone. The two upper storeys are each lighted with five arched windows. The lower storey is lighted by two larger windows, each forming at the top a handsome arch, and subdivided into two smaller ones. The lower storeys are set apart as offices, and are so furnished as to give to the inside an air of comfort and elegance. The various fittings in these apartments are of a very tasteful and convenient description. The upper storey comprises one large store-room. The halls and approaches are laid with red and black Staffordshire tiles, arranged diagonally. The walls are sheeted with pitch pine in narrow widths, jointed and laid diagonally. These are surmounted with polished ornamental mouldings. The hearths are laid in encaustic tiles of a very handsome

pattern. All the internal fittings are pitch pine, wrought clean and varnished. A large coal store is yet to be finished, which will be covered with a circular roof supported upon iron pillars. The works were carried out from the plans and under the inspection of Mr. Robert Collins, C.E. The builders were Messrs. G. and R. Ferguson.

In Waterloo-place may be noticed another improvement no less worthy of mention. The premises of Mr. David M. Smith wine merchant, have been remodelled both internally and externally and some of the most modern improvements introduced. A new façade of mediæval design has been erected, ornamented with carvings in fancy stone. It is built of Belfast pressed brick, neatly pointed. The window dressings, strings and bands are of Dungiven stone. The upper storeys, two in number, are each lighted by two plain oblong windows, while the lower, or ground storey, is lighted by two handsome windows, tastefully ornamented, and forming an arch at the top. They are surrounded with mouldings of cut stone, the ends of which are capped with carved bosses. The doorway is of the same style as the windows, being arched and ornamented with cut stone. The inner doors and windows are filled with embossed plate glass. The design is by Mr. John Kennedy, architect, London, and works have been executed by the firm of Messrs. G. and R. Ferguson.

Mr. Henry Lecky, Foyle-street, has recently had erected a suite of new stores at the Quay. The building, though plain and simple in design, can yet boast of being admirably adapted to its purposes. It is four storeys high, with a frontage of about 90 feet to the river. It is composed principally of brick, the lower storey being plastered in Portland cement. The premises, although in no way ornamental, are a vast improvement, and form a good frontage to the river. The builders were the Messrs. Ferguson.

On the Carlisle-road, Mr. Huther, photographer, is erecting a new studio, the site of which is some twenty yards below the premises he at present occupies. This building is suitably laid out, and will, when completed, be furnished with all the latest improvements in the art. The style of architecture is a domestic Gothic. The entire building consists both of a dwelling-house and studio. The front is of Belfast pressed brick, with a string-course of tile and colored brick running through the centre. A moulded brick cornice is also carried along the entire building. Ornamental designs in coloured brick and enamel relieve the façade. In the centre, and surrounded by a tasteful design in coloured brick are the figures "1873," displayed in enamel. The portion of the building set apart as the studio is two storeys high, each storey being lighted with three windows. The dwelling-house is three storeys high, each storey being lighted by two windows similar to those in the other part of the building. Its outward appearance is substantial and tasteful. The plans were drawn by Mr. Peter Butler, of the firm of Messrs. Butler and Roden. The work was executed by Mr. Hutchinson, builder.

In Ebrington Barracks several improvements have been lately effected, which will add considerably to the comfort and convenience of the troops. The barrack is now lighted with gas upon approved principles. New gas-mains, 4 inches in diameter, have been laid down from a little above the entrance to the barrack on the Newtown-limavady road. The whole of the fittings are of iron, and the work has been executed, under contract, by Mr. Robert Stewart, gas engineer, Victoria-street, Belfast. Over every burner there is a zinc hood and tube for conducting the heated air off into stone-ware pipes, laid down between the floors and ceilings, and thus conveyed outside the building. Several other improvements are, it appears, about to be made in Ebrington Barracks beside those already mentioned.

Messrs. Smith, M'Sparron, and Co., have lately opened a new grocery and wine store

in Foyle-street. The shop presents a good appearance to the street. The Messrs. Ferguson were the builders.

Messrs. Porter and Roulstone have lately altered their extensive grocery establishment in William-street. The front of the shop has been considerably improved, while the interior has been newly fitted up in a very substantial and commodious manner. The shop presents a very lightsome appearance, being lighted by two large front windows. Mr. M'Clelland was the builder.

Mr. Wm. Huston has just opened a new family grocery establishment in Sackville-street, which has been erected by Mr. M'Clelland. The premises inside have been altered and improved, and the outside has been newly decorated.

In Ferryquay-street, Messrs. Rea Brothers (formerly Messrs. Rea and Robinson) have also re-opened their premises in the general drapery and clothing line, the shop and lower apartments having been newly fitted up by the Messrs. Ferguson. The Bible and Colportage Society has removed to new premises in Ferryquay-street from Shipquay-street, where the business of the society had hitherto been carried on. The premises they at present occupy have been entirely remodelled by the Messrs. Ferguson. The façade is considerably improved and finished in a neat and ornamental manner.

It is understood the Messrs. Ferguson have commenced the contract for the new passenger station of the Northern Counties Railway Company, which is about to be built at Waterside. The amount of the contract is, it is said, something over £5,000 exclusive of the iron works. Mr. John Lanyon, C.E., Belfast, who is architect to the company, will superintend the works.

CORRESPONDENCE.

PROPOSED NEW COASTGUARD STATION AT KILLY- BEGS, CO. DONEGAL.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—May I take the liberty of asking, through the medium of your very valuable and influential paper, why is there so much delay in the erection of the long-contemplated coastguard station at Killybegs? Since it was first mooted some twelve years ago, new stations have been erected all along the coast in the neighbourhood—at Malinmore, Teeling, Trihane, and Ballyweel. Surveyors from the Board of Works pay us a visit every year, and send off their reports to the Admiralty. Even within the last few months, Mr. Cockburn, an experienced officer in connection with the Board, made a survey and a selection of three very suitable sites, reporting favourably of them, yet up to the present there are no indications of any preparations being made to commence the work. In the meantime the coastguards are the sufferers, and are obliged to occupy buildings at opposite ends of the town by no means suitable for them; some of them are obliged to pay high rents for houses that were originally intended for labourers, covered over with whitewash for their accommodation. In one of the houses there was such an awful smoke in the kitchen that the tenant was obliged to remove his family to the loft, where they suffer very much inconvenience. It is to be hoped the new buildings will be got up with some regard to design, and have an artistic look about them, in which case I am sure the proprietor of the soil, Mr. Murray Stewart, would add a handsome contribution. Killybegs is a very picturesque and beautiful seaside town, and is resorted to very much in the summer months by tourists en route to the Donegal Highlands. Its harbour is admittedly one of the very best in Ireland, and is occasionally honoured with a visit from some of the largest of H.M.'s ships of war; and, as a harbour of refuge, it has done invaluable service. Of the three sites selected by Mr. Cockburn, I would prefer the site at the Smooth Point, where the men would be so close to their work, and from which there is so fine a look out. At this point it would contribute very much to the architectural beauty of the town. The site in the Church Park is also an admirable one. Hoping something may be done to accelerate the progress of this very desirable work, I remain, yours truly,
Killybegs, 26th April, 1873. KAPPA.

THE BUILDING TRADES MOVEMENT.

IN Birmingham, Edinburgh, Bradford, Blackburn, Tamworth, Dunfermline, Coupar-Angus, Alloa, and a few more towns in England and Scotland, disputes as to wages and time exist between the masters and the men. An increase of wages is mostly sought. Arbitration has been adopted in some districts with success. Although the masons and carpenters in London have notified to the masters their intention of demanding an additional halfpenny per hour this summer, it is not likely that a strike will result if it be not acceded to. The men, however, are not inclined to relinquish their demand, but are to agitate for it until obtained. The delegates of the several trades in London are organizing for a demonstration, which is announced to take place on Whit Monday, against the Criminal Law Amendment Act. We have not heard of anything of importance doing or about to be done in connection with the building or other trades in this country.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

GREAT SCAGLIOLA-STREET—continued.

OUR cicerone made his appearance at the appointed place near the Equestrian School as soon as ourselves, and took up the thread of his story.

"Though a modern street, sir, when compared with others, this quarter has witnessed many queer scenes and characters, and produced not a few celebrated men in different walks of life. On the boards of the Delphic Theatre, a few doors higher up from here, one of the greatest impostors of modern days made his *début*. His appearance and plausible assertion gave an air of truth to his extraordinary stories. Thin, spare to emaciation, long-backed, long-legged, long-jawed, and with long, lank hair, and with eyes that shewed more of their white than those of honest men's, this illustrious stranger walked the stage with a character certified by his parish pastor in the bogs of Connaught.

"No doubt you have heard before now of the notorious Bernard Cavanagh, of fasting fame, who neither ate nor drank for the space of three years and nine months. He was no fanatic, sir; he laboured under no hallucination, and, though looked upon for a while as a strange and unaccountable anomaly, he was nothing short of a consummate scoundrel who managed to deceive priests, parsons, proctors and the general public, and bleed them all collectively for a short period with impunity. Like Valentine Greatrakes, another Dublin impostor who flourished in the eighteenth century, Cavanagh pretended to cure pain and diseases by stroking, and not a few cripples and paralytics and bed-ridden incurables were brought to Great Scagliola-street to touch the hem of his garment. The swindle paid well for a while; the boxes and galleries of the Delphic were crowded daily and nightly, for there were morning *seances* given to accommodate the 'upper ten' and the religious institutions. The saints of old could abstain for a period, but here was a saint with a spiritual stomach that triumphed over matter; and as saints that could fast three years and nine months were not to be found in the calendar, Bernard created a great attraction. When Dublin's credulity was pumped dry, Cavanagh and his agents crossed the channel, and had several exhibitions in the North of England. Shortly afterwards a story reached Dublin that the fasting apostle was detected by parties who were set to watch him in Liverpool. His old love for the flesh-pots of the Gentiles returned, and it was scarcely to be wondered that a man who was reared among the pigs in Drumshambo would not feel a yearning betimes for a rasher of bacon. Disguised in an overcoat, the saint was detected late one night in a small shop in one

of the back streets of Liverpool buying a pound of pork sausages. Charged with his crime, the saint made a hasty retreat to his lodgings, but there were no more exhibitions in the British Empire. Public indignation called out for the stoning of the fasting saint, who, it is believed, retreated across the Atlantic, and, under a changed name, vanished out of public sight.

"The Delphic in later times was the scene of another *début*—that of the celebrated actor O'Dowd, said to be born and reared in Stoptown-street, close by. Be that as it may, O'Dowd rose rapidly to fame; but, like other native worthies, he had to cross the channel before his versatile talents were fully appreciated. O'Dowd was not a little indebted to the kindly appreciation and assistance of Harry Jebb, the lessee of the Delphic, who early discovered the germs of talent in his youthful *protégé*, and did his best to stimulate the young actor. Harry Jebb, sir, was a very good personator himself; and he and his brother, who were twin-like in appearance, played the duplicate characters, in the 'Comedy of Errors' with much effect. Harry Jebb is dead several years, but I believe his brother is still alive, and on the boards somewhere in England. Jebb reproduced the play of the celebrated 'Peg Woffington, and it ran for many nights in the Delphic, on account of Peggy's early connection with this city. Other actors, too, not unknown to fame, won their early laurels on the boards of the Delphic, but other times and other men will perhaps do justice to their characters.

"The scagliola artists were not the only artists that have lived, moved, and had their being in this street. Portrait painters, one or two sculptors, and some publishers and booksellers for a while divided the honour with their brethren. Some of the artists were exhibitors at the R.H.A., and one of them executed a public statue which brought him more blame than fame. He was, however, successful in other performances, to my knowledge.

"Three or four abortive attempts were made by printers in Scagliola-street to establish periodical publications; two of these belong to the year of Revolution, the rest to subsequent periods. A once well-written but now defunct newspaper, the *Evening Courier*, was published for a considerable time in this street, which exercised conservative sway as a true blue in religion and politics. Some of its writers, poets, and reporters passed over to London, where they made a name and reputation afterwards.

"Talking of writers, sir, reminds me of one who spent some of his earlier years in Great Scagliola-street as a partner in a build-firm. John Grame was originally an operative carpenter, with a literary yearning and ambition, and as a youth he contributed many occasional sketches to the pages of Dublin magazines. A builder's desk was not a suitable position for the young aspirant to literary honours. Whilst the elder partner was on the look out after his jobs and contracts, the younger one amused himself with literature instead of dry plans and specifications. As far as Jack Grame was concerned, the jobs might take care of themselves, for he was more interested in gibbeting public abuses than in giving directions for excavations. The partnership was dissolved by mutual consent, and the literary builder launched forth on the public wave as a biographer and author. His most ambitious performance was the 'Life, Contemporaries, and Career of the Modern Tribune,'—a work that brought him some fame but little money. He continued, however, at intervals to furnish sundry sketches to the Irish papers and magazines, but eventually he started for London, where he continued to live for years writing on merely political and social questions. I cannot say, sir, if he is still alive; if so, he must be far advanced in years.

"This street during the last half century has become somewhat remarkable for the number of architects and builders who have settled down here. After hard struggles, a few

of these established themselves, and outlived the storms that struck several down and wiped out their very names almost from the memory of their still living workmen. From very small beginnings—in fact from the position of jobbing carpenters and bricklayers—two or three of the most noted builders have raised themselves to the head of their profession. I remember one of them myself who carried his tool basket on his back, and, when his usual day's work was done, commenced to work after hours, until ten or twelve o'clock at night. While his comrades were drinking he was working, and adding to the savings which enabled him to commence business on his own account. His building establishment is now, sir, one of the largest in Great Scagliola-street, where he removed to some years ago, having formerly been in Terminus-row.

"With the advent of the builders and the sea-side railways, the houses in this quarter sprang up like mushrooms, and the great car trade to the Blue Rock and Slipperstown died away in a galloping consumption. From Bombard-street to Circle End formerly there were large tracts of waste land, speckled here and there with only a few dilapidated cabins—mud and brick. When the sea docks and basin were opened at the end of the last century at Circle End, it was thought that Scagliola-street would be covered in a few years with numerous fine streets, but the tide of fashion set in in another direction. The gas-tar works did not help building speculators, for the rents of houses went down and but few houses more went up. In my former reminiscences I told you of Mr. Mementi Mori, the undertaker who built Queen Mab-square, which was visited once with a virulent epidemic known as the social evil. The houses narrowly survived the shock, though they have often been subjected to repeated coats of whitewash and fumigation. Houses, sir, have histories like men, and characters, which, if once injured, are seldom or ever recovered.

"From the fountain at the end of Alma Mater-street to Ark-street there are no ancient buildings, nor indeed along the entire length of Great Scagliola-street is there anything worthy of special investigation by the learned archaeologist. Westward, along the line of Stoptown-street, a few relics might be eked out. Before the modern half of Great Scagliola-street was opened, a small thoroughfare ran from the angle of Bombard-street to Ark-street. This open was known as Boss-lane. At its extremity, if you turned to the left, you reached the Vice-Provost's garden; while, if you rounded to your right at the angle of Boss-lane, you encountered the Black Church—an ecclesiastical edifice not as old as it looks, but quite as ugly. I hope the architect who designed it is forgiven his sins; and, if he is buried in the graveyard behind, that some unorthodox parson remembers him in his *De Profundis*. On the boundary of the original Boss-lane (now a portion of Great Scagliola-street) were built some houses in later days, one of which, after passing through many phases, became for a while 'The Musical and Singing Academy.' I don't know, sir, what ancient Greek rehearsals were like; but if they resembled some of the modern anti-que concerts I heard in the Singing Academy some years ago, the Greeks and Romans must have finely-attuned ears, and be fond of hearing saws sharpened. Not a few 'stars' visited this Academy, but I am afraid that the majority of them were fallen stars. I like music when it is not too much stretched out, and when it is sung in the living and not in the dead language. It is then too ancient for me.

"Throughout the entire length of this street, sir, there is not one public building of architectural note—not one that I can recollect above the merest commonplace. All are of the earth earthy and of the bricks bricky. Where even stucco has relieved a few of them, they have an internal cancer; wherever a bit of stone has been inserted, it is bald, jejune, and characterless. I have

failed, in my many walks up and down the thoroughfare, to meet with a homely and warm old red-brick front built with the bricks and bonded with the mortar of other days. Scagliola-street is doomed to pass under the manipulation of those dentists and barbers of the building profession which have sprung into life during the last half of the nineteenth century. The 'wiggers' and 'tuckers' are a great race entirely, as Barney Sheehen would say. They can draw rotten bricks like rotten teeth, or cure decayed ones with their restorative enamel to look as good as new. It is wonderful with what facility they can impart good looks to faded complexions. The new race are generally friends with the majority of the builders, but they have a holy horror of those straight-laced and dandified architects. Down with the 'wiggers' and 'tuckers,' say I. Down with all shams! You cannot make an old man look like one young by stopping up the wrinkles in his face; neither can you restore the face of a crumbling brick by a coat of coloured putty. The early vigour is eaten away by time, and all your enamelling is but an arrant imposture. Down with shams and their supporters!!

The lamps were just lighting as the "Oldest Inhabitant" finished his passionate remarks, and, with a hurried "good evening" we parted until the following day.

SUBTERRANEAN FORESTS—MORE BOGWOOD.

We are all pretty well acquainted with the theory that attributes the formation of our bogs in Ireland to submerged forests at some early date of the world's history. There is no doubt as to peat being decayed vegetable matter, but the bog-oak or other bog timber taken up from our spongy morasses is nowise in a rotten state. Bogwood derives its deeply black colour from being impregnated with iron. In Ireland alone there are said to be upwards of 3,000,000 acres of bog, which, according to Sir Robert Kane, would yield 4,000,000,000 tons of peat even when dried. This quantity has been valued at £1,000,000,000 for fuel. In a paper just communicated to the Academy of Sciences by M. J. Rames, we learn some information about subterranean forests. The department of the Cantal—which derives its name from the important mountain-range branching out from the Cevennes, and the culminating point of which is nearly 4,000 feet high, is called the Plomb du Cantal—is nearly all of volcanic origin, a fact evidenced by the existence of an extinct crater which measures five miles and a-half in diameter. M. J. Rames considered this part of France must have been almost flat until the Miocene period. About this time great eruptions of basaltic matter may have taken place, afterwards covered by the upper miocene, with remains of the mastodon, dinotherium, &c. The ground then acquired some relief, and vegetation sprang up on the newly-formed declivities. How long this state of quiescence may have lasted must remain a mystery; but it was at length broken, our author affirms, by a violent eruption, accompanied with showers of ashes and streams of liquid mud, under which these forests were eventually buried. This was the commencement of the pliocene period. M. Rames had discovered the subterranean woods alluded to at two points, one called the Pas-de-la-Mougudo, at an altitude of 2,940 feet on the southern slope of the Cantal; on the other at St. Vincent, 2,775 feet above the level of the sea, on the opposite declivity. In both these localities he has found impressions of leaves, and discovered trunks of trees underground, some standing, others prostrate. A short time before M. G. Saporta had recognised traces of a similar occurrence at a place called Meximieux, in the department of the Ain. On comparing the flora of these localities with each other and our present one, the latter naturalist has found coincidences, which in no case extend to the three together. That which appears to be

most independent of the other two is the list of Meximieux; it is also the richest in still existing species. Generally speaking, however, this pliocene flora is so like ours, that M. Saporta thinks it hardly advisable to create new names for the slight differences ascertained. We are not told whether these subterranean forests are likely to add to our stock of fuel in the shape of peat or bogwood, but we may infer there will be something useful in either way forthcoming.

THE MUNICIPAL FRANCHISE BILL.

THE object of this bill is to assimilate the law in Ireland with that of England. Dr. Ball opposed the bill, as he was indisposed to place in the hands of those persons "occupying what he might call cabins the power of controlling local taxation." The homes of our humbler classes are somewhat of a better order than formerly in several of our municipal boroughs; but we must say, viewing them from a building point of view, the improvements are not very marked in character or extent. The working and industrial classes should possess the municipal franchise, for when wisely exercised, it is calculated to improve our local representation.

There is one feature connected with the moving of the second reading of this bill in the House of Commons which should not be passed over without notice. Out of 103 Irish members, only four put in an appearance—Mr. Butt, the mover, Mr. Kavanagh, Mr. Smyth, and Dr. Ball. Where were all the other "Home Rulers"—those noisy debaters, who are wont to preach home rule, but whose practice falls so far below in other directions? Where were those spokesmen who figure in corporate and university education debates, who turn up when they are not wanted? Even the Burials Bill brought some of them out lately, and exhibited their bigotry; but the pets of the Corporation and the Church showed their intense love of "home rule" by absenting themselves when the Irish Municipal Franchise Bill came up for discussion. We do not intend to follow up the discussion of the behaviour shown by the Irish members, as we are not politicians, but shall content ourselves in citing these flagrant instances of their utter want of principle on an occasion when one would think they were or ought to be deeply interested. Consistency would seem to be a very clever hack, but Irish municipal and parliamentary hacks have better fish to fry, as witnesses and hangers-on when committees are sitting in the House upon such subjects as Central Railway Stations, Sewage, and Lands Reclamation, or Gas Purchase, and Municipal Management Bills. We hope some independent member in the Town Council will put one or two pertinent questions to the Council on the subject of our remarks.

THE OPENING OF THE VIENNA EXHIBITION.

THE Vienna Exhibition opens to-day (May 1st). English and American exhibits are the most prominent as yet among the foreign contributions. Among the more advanced outside the above are the Egyptian, Turkish, Portuguese, Hungarian, and Prussian. France, although she will put in a good appearance, is yet behindhand, as also America, with her arrangements. The five sections into which the building is divided will be understood from the following classification:—1st. The front garden of the Industry Palace, containing the offices of the Commission, Postal and Telegraphic Bureaux, Imperial and Jury Pavilions, Savings Bank, Office of the *Neue Freie Presse*, French and Italian Restaurants, Cercle Oriental, Turkish, Persian, and Russian country-houses, and a vast number more of pavilions, kiosques, villas, tents, and beer-halls. 2nd. The palace itself, Turkish fountains, Fine Arts Hall, and Pavilions des Amateurs. 3rd.

The back garden of the Palace, containing the office of the English Commission, the English, American, Alsatian, and Viennese Restaurants; the German Annexe, Mr. Krupp's establishment, the Western Agricultural Exhibition, Tyrolean, Styrian, Alsatian, Russian, Cracovian, Hungarian, and Vorarlbergian peasants' dwellings, and several highly interesting exhibitions of mining and forest industrial products. 4th. The gigantic Machinery Hall, in all probability the largest shed in the world. 5th. The space behind the Machinery Hall, upon which stand the British workmen's cottages, &c. English, French, American, Swiss, Belgian, German, Austrian, and Russian boiler-houses, gasworks, and a variety of other constructions more useful than ornamental. From the offices of the commission it is but a step into the spacious buildings erected for the exhibition of agricultural implements.

In the agricultural implement annexe are displayed a number of agricultural appliances—steam ploughs, harrows, threshers, &c.,—very highly finished. In the transept several London exhibitors afford a good display of their costly goods. Messrs. Elkington exhibit about £60,000 worth of plate in a show-room constructed of plate glass, burnished metal, and richly-varnished woods. Messrs. Copeland have also a grand pavilion with numerous vases arranged on shelves. Among others at present noticeable are Mr. Atkinson, of Bond-street; Mr. Poole, of Sackville-street; and Messrs. Huntley and Palmer, biscuit manufacturers.

The English workmen's dwellings erected by the commissioners are substantial wooden structures capable of accommodating thirty men. In these cottages the workman receives his three meals daily, at a charge of about 15s. per week. The cooking is performed by Aldershot ranges, and the food consists of roast beef, potatoes, and broth. These cottages will be a regular boon to the men who come from England to set up the machinery, show-stalls, buildings, and other fixtures connected with the British Department.

A great influx of Americans is expected to Vienna, and it is said that all the berths in packets from the States to Europe are taken up to October next. To accommodate any intending Irish visitors, we think it would be wise if our railway and steampacket companies would at once initiate popular excursions. Messrs. Cook and Sons, of London, the celebrated tourists' managers, will meet the wants of all Britishers and British workmen in a liberal manner, and arrangements of a satisfactory kind could perhaps be made with the firm in the interests of visitors from this country.

THE PEOPLE'S PARKS.

It will be instructive to our civic rulers and our citizens to peruse the following list of the London parks which are free to the public. The Registrar-General furnishes the statement as ascertained by the Ordnance Survey:—

"St. James's Park, 58.5 acres; the Green Park, 60.3 acres; Hyde Park, 366 acres; Kensington Gardens, 245.5 acres; the Regent's Park, 406.2 acres; Victoria Park, 223.8 acres; Southwark Park, 63 acres; Kensington Park, 19.7 acres; Battersea Park, 199.4 acres; Greenwich Park, 190.4 acres. These ten parks, together containing 1,852.8 acres, are all within the registration division designated "London," which comprises 78,080 acres, including 2,718 acres of the Thames. Beyond these limits, but still within the district served by the Metropolitan Police, there is also Richmond Park, with 2,015.5 acres; Kew Gardens, &c., with 322.8 acres; Old Deer Park, with 357.2 acres; Boshey Park, 803.9 acres; and Hampton Court Park, 576.7 acres. These last five parks contain together 4,266.1 acres, which, added to the area of the ten parks first above-named, make a total of 6,118.9 acres of public park in or about London."

With all its acknowledged want and crime, and still-existing human rookeries of dirt and disease, the possession of the above parks

is something to feel proud of. With the exception of the Phoenix Park—a noble and extensive demesne, in sooth,—we have no place in the heart of the city free to the public. The squares are still shamefully closed in the face of the people, because civic rule and public opinion are not exercised as they ought. We have repeatedly directed attention to these reserved enclosures in the heart of the city, such as Stephen's Green and the other smaller areas north and south. It is nothing short of a scandal and a stigma upon our city that our public squares should be monopolised by any one class; they were never intended on their first formation to be close preserves, but public gardens for wealthy and humble alike. All well-conducted persons should have full freedom at all times, from morning until nightfall. A change is needed most urgently in their management, and there is vast room for improvement in every one of them. The style of gardening displayed in all of our squares is more antiquated-looking than the invalids and octogenarians that are seen betimes walking within them—a style of gardening that is an excrescence upon the face of nature and a libel upon horticulture. All that can be said in its favour is, that it is conservative in spirit, and detests change, as “nature abhors a vacuum.” It is time that a determined movement should be made to free our public squares, and we call upon the employers and the employed to at once take active steps in the matter, and if necessary let there be a trades' demonstration in support of the object.

THE PRESENT POSITION OF GOTHIC ARCHITECTURE.*

It must be a matter of a very considerable difficulty for those engaged in a combat to form a clear perception of what its ultimate issue will be. The circumstances of the case, the din and excitement of the battle, are altogether opposed to any calm and collected exercise of the judgment. In like manner it is difficult for architects practising at the present day, amid the confusion caused by many rival styles and schools, to predict with any degree of certainty which of the antagonists will come off victorious in the strife.

It is one thing to assert that the particular style of our adoption is sure to become the architecture of the future; it is quite another to stand aside from the throng and then calmly and dispassionately mark the course of each of the various streams of thought that are flowing past us, to estimate accurately the relative strength of each so as to arrive at a sound judgment as to which is destined to become the main river absorbing the rest, and making their waters contribute to swell its own mighty current. This is no easy thing to accomplish; but it behoves us now and then to make the attempt, so that we may ascertain whether we are pursuing the true path of progress.

I do not, however, propose to occupy your time this evening by any speculations as to which of the rival schools at present opposed to each other is likely to become dominant in the future.

The subject is too large for the scope of a short essay like the present, and, moreover, if I were to consider the question, I should be obliged to leave it very much as I found it, not being able to arrive at any satisfactory conclusion regarding it. I have chosen the subject on the programme for two main reasons. First, because it is the principal and most significant product of that great upheaval of architectural thought, which commenced nearly half a century ago, and which is still in active progress. Secondly, because I am fully persuaded that the influence of the mediæval revival will remain indelibly marked upon our future architecture, whatever form it may ultimately assume.

Whatever difference of opinion may exist as to the merits of our revived Gothic architecture—whether it be regarded by some as a style whose highest claim to our admiration is its picturesqueness, but is nevertheless in its nature somewhat barbarous, and deficient in that refinement required in these fastidious times; or whether it be, as its advocates contend, the one form of architecture suitable to our wants—no candid observer can deny the immense influence it is exercising over the tastes and feelings of the present generation. Beginning with ecclesiastical edifices, the mediæval revival soon found its way into every class of building, until at the present day it may fairly be asserted that the majority of recent erections where they have any distinctively architectural features (rather an extensive saving clause, I fear) belong to the Gothic school, using that term in its most comprehensive sense.

But its influence has been by no means confined to its own domain. It has been the means of producing a very marked, and on the whole, beneficial change in the treatment of its old rival the Italian style. There has sprung up a much greater range and freedom in the disposition of its exquisitely-proportioned members, and a departure from the trammels which ancient traditions had imposed upon it, which has frequently been attended with the happiest results, and has imparted an unwonted freshness to what is too often monotonous and formal.

In sculpture, and still more markedly in painting and poetry, there have been abundant evidences during this period of the awakening of a fresh spirit, and a desire to lay aside the old classic types in favour of a more natural and vigorous style.

At the dawn of the revival a gradual awakening took place in men's minds to the wonderful though hitherto unheeded beauty of the remains of mediæval art in their midst.

This impulse was extended and deepened through the labours of a band of enthusiastic men, who made the revival and development of what they called the national school of architecture the great object of their lives. The movement soon gained ground, and buildings founded on the new principles began to arise on all sides. At the outset the movement took the form of almost literal reproduction of the forms of certain periods of the old style, generally the worst, and sometimes in sham materials; but in the course of time, and greatly through the instrumentality of these devoted labourers, greater knowledge of the details of, and the distinctions between, the various styles was obtained, as well as of the great principles which underlie and manifest themselves in the old work.

The principal figure in the new movement was the elder Pugin, who contributed greatly to its development both by his example and by his pen. Of his wonderful command over the details of Gothic art, especially of the later periods, and of his enthusiasm for and untiring labour in the cause of the art he loved, it is impossible to speak too highly.

Professor Scott, in a recent lecture at the Royal Academy, thus alludes to the work of this distinguished man:—“His ‘Three Principles of Pointed or Christian Architecture,’ which appeared in 1841, was a gigantic step in advance. It grappled at once with all the fallacies which had corrupted modern architecture, and established a code of rules founded upon common sense, utility, and truth; while his ‘Apology,’ which came out a little later, showed the necessity of falling back upon our national style, and its ready applicability to every requirement of our day. In the meantime the success of his own personal labours was truly astonishing. Not only were the advances he made in the revival of Pointed architecture most rapid, showing genius in every touch,—this was in fact the smallest of his achievements,—he actually revived, by his own personal exertions, every one of its subsidiary arts: architectural carving and sculpture, stained glass, decorative painting, metal work, &c.,

all felt the impress of his hand, and of his genius.”

Up to this period the aim of the new movement had been almost exclusively in the direction of our national Gothic and its various subdivisions. But a change was at hand, as was indeed in the nature of things inevitable. It would have been strange, if in these cosmopolitan days the rich art treasures of mediæval Europe had failed to exercise their influence on the revived English style.

New writers, too, were not wanting to sing the praises of the Continental schools. The eloquence of Ruskin told of “fresh fields and pastures new” in North Italy, and straightway our young architects flocked there in numbers, and Venetian Gothic and its characteristic wall-decoration became the rage for a time.

As usual, however, the imported fashion was carried to extremes; its more salient features were introduced by some architects on every possible occasion, and to a wearisome extent; while its details were too often applied in a crude and inharmonious manner.

The lavish use of polychrome decoration being one of the principal of its distinctive features, we were visited with an outbreak of architectural scarlet fever, which set in at first with alarming severity, and which still exists amongst us, though happily in a very mild form.

The claims of the French school of Gothic art were not without recognition, however. Attention was early directed to the architecture of Normandy by Pugin and Le Keux, and subsequently the magnificent works of Le Duc have revealed to our gaze something of the inexhaustible treasures to be found among the mediæval buildings of France. Nesfield, Shaw, Johnston, and others, have assisted in the same useful work, and have brought home and made us familiar with most of the prominent examples of ancient architecture in that fair land. From its proximity to our own shores, there are doubtless few amongst us who have not seen for themselves some of its architectural glories. To those who have not yet done so, I would say go by all means, and you will be more than repaid for your time and expense.

The severe yet most graceful forms of the earlier French Pointed styles could not but largely influence an epoch, the architecture of which is in a state of transition, and the most prominent characteristic of the people of which is, like that of the Athenians of old, “to hear and see some new thing.” This influence has been more gradual, more widespread, and is, in my humble opinion, more legitimate and likely to be permanent than that of the Venetian importation which was contemporary with it.

So far, and at the risk of being tedious, I have endeavoured to describe the principal circumstances which have been the means of moulding our revived architecture, and of bringing it to its present state of development.

Other minor causes have been at work, but I am compelled to leave them unnoticed, and to turn to the more immediate consideration of our subject.

The important question will here naturally suggest itself: has our revived Gothic realized in any great degree the high hopes and bright anticipations which in its earlier days were formed of it? Is it in a fair way of becoming in due time our national architecture of the future, a fit exponent of the expansive culture of this nineteenth century? This is the great question, but it is one which there appears to me to be much difficulty in answering decisively.

There can be no doubt but that the confluent streams which have joined the main river of our English Gothic, have materially deflected its original current, and given to it a direction which its earliest advocates neither intended nor foresaw. It is by no means certain, however, that this strange mixture of styles is a necessarily evil thing for the future of our art. Many noble lessons, and many

* Paper read by Mr. W. M. Mitchell, at meeting of Architectural Association of Ireland, April 24th, 1872.

fresh and exquisite combinations of form may be drawn from the magnificent examples of Pointed architecture with which most portions of the Continent abound.

It would be folly to reject these, and to confine our studies to our own insular type of Gothic. Such a course, even if practicable, would prove fatal by its exclusiveness.

But if the prevailing system of eclecticism in architecture has its uses, it has also its abuses, and it must be confessed that the latter are making themselves very apparent just now. The frequent and capricious changes which have characterized Gothic work of late years do not augur well for its future supremacy. We see on all sides a restless craving for novelty and sensation. New phases appear quickly upon the scene, live their little day, and are then cast aside for no better reason apparently than to make room for something more fresh and striking.

Our very advantages are apt to become a snare to us. Modern science has placed the art treasures of the world before us, and, like children, we turn from one beautiful plaything to another, unable to be content with either.

The fact is, as it appears to me, architecture is in great danger of becoming merely a thing of fashion and caprice, much in the same way as millinery is. Unfortunately the results are widely different. Our creations will survive the transient fashion of the day, and will, if designed upon no higher principles, remain only as monuments of the rage or folly which happened to obtain at some particular date. If our architecture aspires to something more noble than this, it must rest on a more enduring foundation. It must be founded on, and must express in its features the immutable principles of truth, fitness, and beauty, if it is ever to become a living art to us in the same deep sense that both Greek and Mediæval art were to their founders.

(To be continued.)

THE CORK HARBOUR ENGINEER, AND CITY SURVEYOR.

THESE two appointments are now vacant by the resignation of Sir John Benson, who has held both for the last quarter of a century or more. On the 14th inst., the Harbour Commissioners will, as they have announced by advertisement, proceed to the election of a professional man to act solely as their engineer. In thus separating the two offices, we think the citizens of Cork have, through their representatives, acted wisely, for the duties are quite distinct, and the professional training and knowledge required in each case even more so.

We shall watch with much interest this event, and we sincerely trust that the result of the election will be to place the "right man in the right place," or, more correctly speaking, in a place to be made right. We are well aware that, in the disposal of such situations by public bodies, party influences and political, even sectarian, prejudices weigh considerably with men who in their private capacity as citizens would act differently; and, therefore, it is to be feared—as indeed it has been rumoured in the present instance—a feeling prevails that some one or two local men will secure a considerable number of votes on the board, to the exclusion of competent candidates. However, we confidently expect that the gentlemen who represent the commercial wealth of the second city of Ireland will be found possessed of more common sense and independence than to hand over the destruction of their property to any one, from such ridiculous motives. We would venture to say there is not one local man (eligible as to age, or likely to be a candidate) at all qualified for this post; but it is well known that there are many civil engineers elsewhere of great professional ability and experience in dock and harbour works, disengaged or about being so, by reason of the completion of the works on which they have been employed; and it is

to be hoped that only a man of this class will be selected. The importance of the appointment cannot be over-estimated. The results involved are almost of national consequence, because the making or marring of the noblest harbour and river in the world, and consequently the development or destruction of the port of Cork are dependent thereon. The salary named by the commissioners in this advertisement is from £400 to £600 per annum; the latter amount, we believe, they would be prepared to give at once to a qualified engineer; and it has been stated that they would even go so far as £1,000 a year to secure a thoroughly suitable officer. It is much to be regretted that that was not set forth in their advertisement, as in that case men of position and ability might be induced to come forward as candidates.

There is a vast amount of work to be done before Cork can take rank as a first-class port. Docks, quays, jetties, river improvements, all on a large scale, and involving enormous expenditure of money, and the exercise of originality and skill in designing, and practical knowledge in execution—these are qualifications which cannot be possessed without education, lengthened personal experience, and grasp of mind; and great indeed will be the mistake made by the citizens of Cork if they are contented with less.

With regard to the other office—that of city surveyor—the general impression, not only with the members of the corporation, but amongst the citizens, appears to be that, as Mr. Robert Walker, superintendent, has for some time past been acting as surveyor, and has at all times given the utmost satisfaction, he should be confirmed in the appointment. This arrangement is not only an economical one, but most popular. Mr. Walker is an old citizen universally respected for his obliging habits and courteous manner; and being a thoroughly practical man, and enjoying a lengthened experience in the duties of the office he will now be called on to fill, his confirmation in the situation of city surveyor will give complete general satisfaction.

DUNDALK AND GREENORE RAILWAY AND HARBOUR WORKS.

THESE long-contemplated and now accomplished works were opened yesterday with Viceregal ceremonials. A new route, with good and fast-sailing steamers, is now added to the other communications existing between this country and Holyhead. Greenore a few years ago was only a bare strand, but the scene is altogether changed. Beside the railway station and goods stores, there is a hotel and a number of new dwellings erected, some of which are intended for the officials.

The new line is but twelve miles in extent between Greenore and Dundalk; but, short as it is, it presented some difficulties in its construction. Two iron bridges span the estuaries at Ballymascanlon and Riverstown; these are pretty considerable stretches of water, and there are in both cases twenty-two spans of nearly 40 ft. each. These iron viaducts, as we may call them, are supported by screw piles with lattice girders. The intermediate stations on the line are Bellurgan and Bush.

The new harbour will afford at all times a sufficient depth of water for the arrival and departure of the steamers. To accomplish this work, the bar had to be excavated a distance of about three quarters of a mile, a channel of 400 ft. in width and 14 ft. in depth at shallowest parts. For 150 ft. of its width and for its entire length a depth of 18 ft. at low water is obtainable. This accommodation will be greatly increased before the close of the year. Separate works have been completed for supplying the new town with water.

The engineer of these harbour works, Mr. Barton, of Dundalk, has successfully prosecuted the undertaking from the commencement; and, along with the credit which is due to him, the efforts of Mr. Macrory are entitled to warm recognition.

THE LATE SIR WILLIAM TITE, M.P., F.R.S., ARCHITECT.

THIS distinguished English architect died at Torquay on the 20th ult. His works, municipal and domestic, are numerous, but the most prominent of the number is the Royal Exchange of London. The deceased architect was very popular amongst his colleagues, and was not stint in his bestowal of time and money to architectural objects and for architectural studies. He was a member of the Institute of British Architects, of which he was at one time President. He was also Fellow of the Royal Society, of the Society of Antiquaries, and other bodies. He was a frequent writer on architecture, and a speaker at the institutions of which he was a distinguished member. Amongst his publications were: "On Paris Street Improvements," "Proceedings Taken on Building the Royal Exchange by Sir T. Gresham and that Built in 1666." When the foundations of the Royal Exchange were being sunk there were numerous antiquities unearthed of historic note, and of these Sir William Tite prepared a descriptive catalogue. He was buried on Saturday last at Norwood Cemetery, with every mark of deep respect, and around his grave were many who enjoyed his confidence, and were through many years his deeply attached friends and colleagues.

ARCHITECTURAL ASSOCIATION OF IRELAND.

An ordinary general meeting was held at the Rooms of the Association, on Thursday evening last, the 24th ult.

Mr. A. W. ROBINSON in the chair.

Members present—W. Fennell, C. J. Allen, J. Davis, T. W. Barry, J. Todd, J. Knox, W. O'Neill, D. J. Freeman, J. E. J. Wilson, W. Mitchell, T. Hardy, W. Bouchier, A. E. Murray, J. Coppinger, J. Duff, J. L. Robinson, hon. sec., &c., &c.

The minutes of the previous meeting were read and confirmed.

The secretary read the following correspondence:—

April 7th, 1873.

DEAR SIRS,—The Council of the Institute has authorised me to hand over to the Association the late valuable gift of books from Mr. Edmund Sharpe, and any other books we may possess, or from time to time acquire; the Association to be responsible for the care, to acknowledge receipt of same from time to time, and to permit members of the Institute to have access to them, if they should require it at any time. All books, the property of the Institute, to be returned to it, if at any time the Association should lapse or break up, or be changed into another form of society. The Institute will be at the expense of binding any unbound works before transferring them, and will do all in its power to assist you in forming a library. I would suggest that you thank Mr. Sharpe directly on behalf of the Association, for his interest in its welfare, and thoughtful stipulation in presenting his valuable works—I am, dear sirs, yours faithfully,

THOMAS DREW, R.H.A.

Sec. R.I.A.I.

To the Hon. Secs.,
Architectural Association of Ireland.

Mr. Robinson said that the secretaries had, by direction of the committee, thanked Mr. Sharpe and Mr. Drew for the gift.

Mr. W. M. Mitchell proposed, and Mr. D. J. Freeman seconded a resolution—"That the thanks of the Association are due to Mr. Sharpe and the Council of the Institute; that the Association accept the gift and appoint a librarian, and that the committee be empowered to draw up rules for the management of the library," which was carried unanimously.

The following gentlemen were balloted for, and elected members of the Association:—Harold Oldham, John C. Wilmot, Sandham Synnes, F.R.I.A.I., William O'Neill, and F. Franklin, F.R.I.A.I.

Mr. William M. Mitchell then read a paper on "The Present Position of Gothic Architecture," which will be found on another page.

Mr. C. J. Allen proposed and Mr. J. L. Robinson seconded a vote of thanks to Mr. Mitchell for his paper, which was carried by acclamation.

SUCCESSFUL EXPLORATIONS IN ASSYRIA.

Mr. George Smith, of the British Museum, the gentleman whom the proprietors of the *Daily Telegraph*, London, commissioned to proceed to Assyria, writes to say that he has been most successful up to the present. Tablets, inscriptions, manuscripts, and relics, illustrative of the archæology, history, and chronology of the people of these ancient lands, have already rewarded his search. Detailed particulars are on their way, which will shortly be communicated to the public.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

THERE was an ordinary general meeting on Thursday evening, 17th April, when the President (J. H. Owen, M.A.) made some observations on a resolution proposed in favour of professional assessors to assist the judges in building cases, &c., under the new Judicature Bill, which we will give in our next number.

The following gentlemen were elected. As Fellows—Samuel P. Close, Associate, 53 Waring-street, Belfast. Timothy Hevey, 11 Arthur-street, Belfast. As Associates—Maurice A. Hennessy, 10 Glentworth-street, Limerick. As student—Andrew Joseph Moran, 19 Russell-street.

A collection of the works of Edmund Sharpe, Esq., M.A., F.R.I.B.A., kindly presented to the Institute by the author, were placed on the table for examination, and a cordial vote of thanks passed to him.

THE SANITARY STATE OF ARMAGH.

REPORTS have reached us of the unsanitary state of this town, and its total unpreparedness to cope with the last outbreak of epidemic. The subject has been discussed in the Armagh Union, but the result has been a large amount of talk with a very small result in practical work. It is the duty of the Town Commissioners to take action at once to remedy the evils existing in the town. There is something more required for the town of Armagh than the procuring of a disinfecting apparatus, useful as that may be. Dr. Gray, in the Armagh Union, has very properly directed attention to the state of the town, and we pointed out the powers invested in the Town Commissioners, who ought to take immediate action in the matter. We hope they will do so for their own credit's sake, and also for the protection of the lives of the inhabitants, which are undoubtedly in danger.

MAY-BE'S.

THIS is the first of May, and it is a month in which many things may happen. There may be May-poles in Stephen's-green, and a May-bush may be planted on the top of Cork-hill, to signalise the victory of the Town Council in being converted into gas-stokers.

May be these things may happen, may be they won't, and may be, after all, it is better that they shouldn't.

May be the Town Clerk will give a lecture this May on his "Impressions of London," after his return from the crooked ways of London.

May be the witnesses on the Gas Bill refused like men of honour and high principle their travelling expenses. It may be that they were not satisfied with what they got.

May be they put up in the big hotel in Victoria-street, Westminster, but, being "wise and prudent men," it may be that they were content with a coffee-shop in Fleet-street.

May be the opposition was promised to be withdrawn as soon as certain conditions were complied. May be these conditions were pecuniary matters, but until the rogues fall out, may be we shall never know.

May be the promoters succeeded, because, like the gas directors, "they were men of ordinary intelligence," and may be those among them who had no intelligence, borrowed that commodity from the others who could badly spare it.

May be (all things considered) it is better to look a little foolish than wise, for otherwise it may be that men may write you down no better than you are.

Before this May twelvemonth, may all our scandals, civic and otherwise, be removed. May our city receive due sanitary inspection. May her streets be properly scavenged and watered, may her poor be properly housed, may our taxes be reduced, may our food and drink adulterators be prosecuted and punished; and last, though not least, may corporate representation be purified; may it be so, though the wish is only a may-be.

THE MAIN DRAINAGE.

The Town Council's draining with might and with main, I believe it, said Mike, to my sorrow;
Their new rates have made such a very large drain
Through my pockets, I'm drowning, begorra.

PRINTER'S DEVIL.

[Despite of our warning, our "imp" is going on to his liking. As he is evidently not afraid of the "stick," we will be obliged to send him at once to the "galleys."]

TENDERS.

For additions and alterations at Cahercon House, Co. Clare, the residence of Colonel the Hon. Charles White, M.P. Mr. William Sidney Cox, architect, Limerick. Quantities supplied by Mr. E. P. Gribbon, Dublin:—

	General Building Works			Plumbing			Papering and Painting		
	£	s.	d.	£	s.	d.	£	s.	d.
Gahan and Son, Dublin ..	6,371	7	6	263	0	0	210	11	6
Ryan and Son, Limerick ..	4,958	0	0	289	0	0	465	0	0
Bryan Sexton ..	4,650	0	0	335	0	0	325	0	0
Michael Walsh, Foynes ..	4,432	14	0	318	1	0	316	13	9
Thos. Pemberton, Dublin ..	4,195	0	0	172	0	0	244	0	0
William Carroll, Ennis ..	4,070	0	0	229	0	0	237	0	0
E. P. Nagle, Dublin ..	3,978	0	0	186	0	0	250	0	0
*J. Cavanagh, Limerick ..	3,950	0	0	..	..	..	..	..	..
Cussen & Son, Templemore ..	3,485	0	0	281	0	0	275	0	0
*Michael Cusack, Limerick ..	..	..	..	..	..	..	178	18	6
*Thomas M'Namara ..	..	..	..	251	19	8	..	..	..
James Ryan ..	..	..	..	290	0	0	..	..	..
Michael L. Cox, Ennis ..	..	..	..	..	..	..	693	0	0
Hodges and Son, Dublin ..	..	..	..	271	0	3	..	..	..

* Accepted.

HOME AND FOREIGN NOTES.

THE BREHON LAWS.—The Third volume of the Brehon Laws, we understood, is ready for publication. It forms the conclusion of the "Senchus Mor." The fourth volume is in a forward state, and, when ready, will be put to press also. The work is edited by the Rev. J. O'Mahony, Professor of Irish in Trinity College, and A. G. Richey, Q.C., Professor of Feudal and English Law in the same University. When these works are completed, they cannot fail to form an important and valuable contribution to Irish history and the ancient laws and institutions of this country.

THE DEATH OF DR. LOTTNER.—Since our last issue the death of the Professor of Sanskrit, and Assistant Librarian of Trinity College, has taken place. The deceased was a member of the University of Berlin, and was reported to be a pupil of Bopp and Grimm. He was much respected during his residence in this city, and he was known to be a contributor to the *Philological Journal* and one or two foreign publications. More than one student and member of our learned bodies were indebted to him for advice and assistance in their literary labours.

A MEMORIAL FOUNTAIN FOR WEXFORD.—The ceremony of unveiling the fountain erected at the Bull Ring, Wexford, to the memory of the late General Browne, of the 12th Lancers, was performed on Monday last by the Hon. Mrs. Deane Morgan, assisted by the Mayor. The fountain, which is of Caen stone and marble is the gift of Mrs. Daubney to the people of Wexford.

AN HISTORIC OAK.—The *Antiquary* says that in 1810 an oak tree was felled at Newport, in Monmouthshire, measuring 28 ft. in circumference.

It was supposed to be 400 years old from the rings in the grain. In 1823 a venerable oak, known as the "Admiral's Oak," which grew with two others, along the avenue of Bellvue, Lawrencestown, County of Galway, was felled by the order of the agent, during Mr. Lawrence's absence on the Continent. It measured in circumference 31 ft, and was sold for £170. It was reputed to be 500 years old. Mr. Lawrence, the father of the present proprietor, the Rev. Charles Lawrence, was known to be much grieved at so serious a desecration, and actually altered the approach to his mansion lest he should be reminded of the loss of his pride of the forest. There are numerous very ancient magnificent oak, ash, walnut, and cedar trees still flourishing in Lisreighan Demesne, County Galway.

TO CORRESPONDENTS.

ENGINEER.—Machinery has been worked in Ireland in the production of manufactures for a long period, but the introduction of steam for driving machinery dates back only to the latter end of the last century. About the year 1791, we believe, the first regular steam engine worked was erected in this city.

THE DUBLIN TRADE GUILDS.—The subject will not be lost sight of. In reply, an act was passed in 1759 regulating the Corporation of the city, by which junior guilds of trade acquired considerable privileges.

PORCELAIN.—The first manufacturer of porcelain in England is said to have been Thomas Fry, who was born in this city in 1710.

OBELIQUE BRIDGES.—Skew bridges, as works of general construction, have sprung up with the introduction of our railway system; but the principles of their construction may be said to be as old as Euclid. In several ancient buildings specimens of oblique arching exist. Watson Buck's work on "Oblique Bridges" is a valuable one on the modern practice, and may be consulted with safety and profit to the student or workman.

A CARPENTER.—Staircase and handrailing construction ought to be understood by every carpenter, without exception. The difficulties are small indeed, even in the most ambitious forms, while in the ordinary descriptions of staircases with their handrails we cannot see how any difficulty could arise to the intelligent workman who cared to teach himself, even without the assistance of his fellows. There is altogether too much "pothier" made about this branch of joinery, and a needless amount of "settling out" of lines and constructing of moulds, which can altogether be dispensed with. The most practical, useful, and simple work on staircase building and handrailing is that recently published—"The Practical Carpenter and Joiner," by R. Riddell, together with his "New Elements of Handrailing." The last edition of his work is accompanied with a number of cardboard models. Illustrative of the most difficult branches of framing and roofing, and also of staircase and handrails. A carpenter who knows anything about stairs, or who possesses the ordinary amount of intelligence, ought to be able, after reading these works, to put up any kind of staircase, including the constructing of their handrails.

CURRENT LITERATURE.—Some magazines to hand, which, with others, will be noticed in our next issue.

"A VISIT TO EPPS'S COCOA MANUFACTORY.—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*."—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cocoa, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOLINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbot-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

RATES OF SUBSCRIPTION TO IRISH BUILDER.

(Town.)	s.	d.	(Post.)	s.	d.
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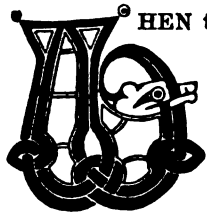
It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

The Irish Builder.

VOL. XIV.—No. 322.

Municipal Institutions : their Rights and Duties.



WHEN the Municipal Corporation Act (5 and 6 Wm. IV.) was passed, high hopes were entertained that a great reform would be inaugurated, and a rapid improvement would take place in all that appertained to corporate powers and duties. Shortly after the passing of this first Corporation Act came the Irish Municipal Reform Bill, against which the Lord Mayor of Dublin in 1839 and a deputation of the then Corporation presented a petition at the bar of the House of Commons. The bill, however, was subsequently carried; and in 1841 the first Town Council elected under the Irish act sat in the Assembly House in William-street, and Daniel O'Connell was sworn in the first Lord Mayor under it. Among the primal duties of the newly-constituted authorities, as imposed by law, were: the making of bye-laws for the good rule and government of the borough, for the suppression and prevention of nuisances, and for the imposition of fines on all persons clearly proved guilty of offending. Two auditors and two assessors were to be appointed—one to audit the accounts of the borough, and the other to assist in revising the burgess list. A town clerk and a treasurer were to be elected, but neither was to be a member of the Council—a wise provision, of course. The rents, profits, and interest of all corporate property were to be paid to the treasurer, and carried to the account of the borough fund; and the accounts were at all times to be open to the inspection of the members and ratepayers, and regularly audited, and printed for the use of the ratepayers. There were other duties, but it is not necessary to go over them. Confining ourselves to what we have mentioned, let us ask how far or to what extent has the Reformed Corporation of Dublin performed its duties?

Upwards of thirty years have now elapsed since the new Corporation was invested with power, and several acts have since been passed by the legislature with a view to improve local government. Deficient as some of these acts are, they have never been utilized by our Corporation, and have consequently remained dead letters. Looking back over several years of municipal rule in this city, almost each year from the commencement has shown us a departure in one shape or another from the duties appertaining. The Town Council during the same time became less and less respectable. We do not merely allude to the social standing of the members, though even in this particular there has been a sad falling off. Faction has been allowed to establish itself and take root where it should have been stamped out on its first appearance, and powers and privileges that were conferred for local purposes alone have been made to subserve personal and general purposes.

During the last ten years and upwards the financial affairs of the Dublin Corporation have been a perfect muddle. Although the taxation of the city has been more than sufficient at any time during the period to keep the Corporation in a solvent condition, and to carry out the urgent reforms and improvements necessary, yet the most patent subterfuges have been adopted to tide over pecuniary difficulties brought about by an illegal and most reprehensible outlay of public trusts. The condition of a trader who has to carry on his business by a system of accommodation bills is a very deplorable one, yet a somewhat similar system has been adopted by the managers of our local affairs in this city. One loan has been made to wipe out or rather pay the interest on another, and the parties who have plunged the city into debt and driven a large portion of the former inhabitants into the suburban districts to escape the weight of the growing taxation, have of late been imitating the example in their own cases.

The state of representation in our Town Council at present may be described thus—A certain knot of gentlemen, who must be nameless, exists in the Corporation, who are frequent talkers, and who on all occasions when they speak, presume they are speaking in the name of the citizens whose guardians they represent themselves to be. These clever gentlemen are the constant movers and seconders of resolutions on matters in which they alone feel interested. These gentlemen are in the hands of parliamentary agents and other agents concerned in getting Corporate influence for the promotion of their schemes. Another class of gentlemen in our Corporation are those which we are almost inclined to call the "silent members," only that they occasionally speak and cry "hear, hear." Their attendance at Corporate meetings is only required for voting purposes, and they are generally noticed when their presence is wanted. The third class of members are the "independent members," which, unfortunately, number very few, and are, in consequence, generally in a minority. The "silent members" whenever they open their mouths are sure to say something, and that something is comical in the extreme. What earthly use such a representation as we have described is to this city, it is difficult to say, but as to its injury there cannot be the least doubt. Only recently, as in the case of the Gas Bill, we have had an instance of the Corporate rectitude of several members of our Town Council. As shareholders in the Gas Company, of course they had an interest in that property; and as members of the Corporation, they used their position to sustain their personal interests. When defeat overtook their conspiracy against the interests of the citizens, they avenged their losses by denouncing the management of the company, about whose shortcomings they were previously so prudently silent. Wise and prudent gentlemen they were, no doubt, in acting thus, but they were too clever by half.

We would be sorry, indeed, that a day should come that would rob municipal institutions of their legitimate rights and privileges, or curtail their powers for doing good. Municipal institutions have a noble history, and grand memories, dating back into the mists of early time. We are adverse to seeing their powers further curtailed, and the duties belonging, and rightly belonging to them, centralised; but to this, we fear, it must

come, if a new leaf is not turned in their conduct and management. It is a pitiable sight to witness the degradation that signalises the state of many of our corporations through corruption and mismanagement. The Dublin Corporation, we are free to allow, is not the only sinner; but she is, at the same time, one of the greatest, if not the greatest, in the three kingdoms. In this country there is no corporation which can compare with ours for extravagance, incapacity, and general bad conduct. Improvement can only come through a change in the representation. One or two honest and independent men may resign from time to time, but the great body of the present members will hold on, and will strain every nerve, and use every device at each election to be returned. The power is in the hands of the ratepayers if they will it, to make a speedy change in the representation. If they studied their own interests, they would long since have established a Ratepayers' Association, by which the representation could be controlled, and none but useful and practical business men returned. For the last twenty years several political parties have used, and corrupted for their own purposes, the influence of the Corporation of Dublin. Some of our political journalists have for years used the Town Council for their own personal ends, so also have more than one of our members of Parliament. The Municipal Act has been ignored, and the several bye-laws treated with derision, as if they had never been framed, all to suit the purposes of the ascendant party. The ignorance of many of the members of our Town Council is somewhat startling, concerning the very laws they are acting under. We question if there are half a dozen among the members who, if they were examined to-morrow by a Government Commission, would be able to specify their duties under the Municipal Act; and it is doubtful if three could be found who, by their answers, would prove they were qualified to fulfil the duties of Inspectors of Nuisances.

THE STRENGTH OF BUILDING MATERIALS.*

FOURTH NOTICE.

THERE is a great deficiency of information amongst architects, builders, and their workmen in this island in regard to the strength and properties of building materials. In the matter of stone, if it be from a long-worked and well-known quarry, the architect and builder rest content that all will be right. From the same quarry, though not exactly from the same cutting, is produced a building stone that varies much both in colour and strength. It is not always safe to rely upon the quarryman's word as to the quality, for the easier the stones can be worked the greater advantage it will be to the owner of the quarry and the masons engaged in dressing the stones. All building stones that are easily dressed are not of course to be rejected, for it is the property of several of our much-used stones to harden considerably on exposure. Colour, however, is a good test as to durability; and before any building stone from a new quarry is used its strength should be practically tested by experiment.

* "The Theory of Strains in Girders and Similar Structures, with Observations on the application of Theory to Practice, and Tables of Strength and other Properties of Materials." By Bindon B. Stoney, M.A., M. Inst. C.E. New Edition. London: Longmans, Green, and Co.

It is upwards of a quarter of a century since Mr. Wilkinson's experiments on Irish building stone were given to the public, and we have often wondered why more information was not evidenced upon such an important matter by our building profession. The majority of our builders were seemingly content to jog along in the same old-fashioned methods of their fathers, taking everything for granted. The conscientious portion, when they built, were sure not to err on the side of strength, at least so far as bulk of material was thought to show it. The unprincipled, on the other hand, reduced the dimensions of their materials of every kind, and consequently came to grief as a rule, and bringing others to grief along with them. There was an utter want of technical or scientific knowledge displayed on both sides; and, notwithstanding, our respectable builders of the old school built well and strong.

Mr. Stoney quotes in his work the opinion and the result of the experiments of other well-known professional men on the strength and properties of building stones. According to Mr. Clark's experiments, the sandstones gave away "suddenly and without any previous cracking or warning. After fracture the upper portion generally retained the form of an inverted square pyramid, very symmetrically, the sides bulging away in pieces all round. The limestones formed perpendicular cracks and splinters a considerable time before they crushed." On the mode of fracture, Mr. Rennie said—"It is a curious fact in the rupture of amorphous stones, that pyramids are formed, having for their base the upper side of the cube next the lever, the action of which displaces the sides of the cubes, precisely as if a wedge had operated between them." Speaking on this subject, Mr. Wilkinson observes—"The results of the (one inch) cubes experimented on show the strongest stones to be the basalts, primary limestones and slates. Of the limestones, the primary limestones and compact hard calp are the strongest; and the light dove-coloured and fossiliferous limestone are among the weakest. The strength of the sandstone like their mineral aggregation, is very variable."

Mr. Stoney recommends, when any building of importance is about to be erected, that the strength of the stone to be used should be tested by actual experiment. He has found in his experience that with granite and limestones the first crack may be expected to take place with one-half to two-thirds of the ultimate crushing weight. According to Mr. Wilkinson, the crushing weight per square inch of Irish granites is as follows:—Killiney, County Dublin (very felspathic), 10,780 lbs.; Kingstown, do. (grey colour), 10,115 lbs.; Blessington, County Wicklow (coarse and loosely aggregated), 8,630 lbs.; Ballyknocken, do. (coarse micaceous), 8,178 lbs.; Newry (slightly syenitic), 13,440 lbs. The crushing weight of Irish marbles per square inch—Kilkenny black, 15,120 lbs.; Galway black, from Menlo quarry, 20,160 lbs. Of limestones—Listowel quarry, County Kerry, 18,043 lbs.; Ballyduff quarry, King's County, 11,840 lbs.; Woodbine quarry, Athy, Kildare, 14,850 lbs.; Finglas quarry, County Dublin, 16,940 lbs.

Speaking upon the crushing strength of rubble masonry, Professor Rankine said—"The resistance of good coursed rubble masonry to crushing is about four-tenths of that of single blocks of the stone that it is

built with. The resistance of common rubble to crushing is not much greater than that of the mortar which it contains." Rondelet has furnished a table, quoted in Mr. Stoney's book, of the crushing strength of lime mortar eighteen months old. This table will be found of use. The crushing weight per inch of—Mortar of lime and river sand, 436 lbs.; the same, beaten, 596 lbs. Mortar of lime and pit sand, 578 lbs.; the same, beaten, 800 lbs. Mortar of cement and pounded tiles, 677 lbs.; the same, beaten, 926 lbs. Mortar with pounded sandstone, 417 lbs. Mortar made with puzzolana from Naples, 521 lbs.; the same, beaten, 758 lbs. Fifteen years later these experiments were repeated, when the mortar of lime and sand was found to have increased in strength about one-eighth, and the mortar of cement or puzzolana about one-fourth.

In tables given of Portland cement concrete—blocks of ballast set and kept in air for one year, also set and kept in water for the same time—some interesting results are afforded as to crushing strength. The compressed concrete was considerably stronger than the non-compressed. In his own practice Mr. Stoney says he has always the concrete carefully rammed, and "when it forms the matrix for large rubble stone the concrete is compressed between the stones with iron tamper having T-shaped ends about 5 in. long. This permits it to be mixed stiff, with but little water, and, thus solidly rammed, the stones will generally break sooner than the concrete in which they are imbedded."

We need a series of experiments to show us the crushing strength of the home-made bricks and building mortar of this country, or that generally used in this city; also a series of experiments on the best possible bricks and mortar producible from native materials. The difference would be a most marked one. The major portion, we regret to say, of our Irish bricks are rubbish; the clay in the composition of some is unfit for the purpose of brickmaking, and in others it is not properly prepared. The mortar in our cheap-class suburban dwellings contains a greater portion of loam than clear, sharp, fresh-water sand. Road stuff very often finds its way into the body of the brickwork in large doses, and on the rough-coating plaster of the walls. A delicate skimming of lime-putty hides the cancer that is sure sooner or later to break out.

Speaking of the working load on foundations of earth, clay, gravel, and rock, Professor Rankine stated—"The greatest intensity of pressure on foundations in firm earth is usually from 2,500 lbs. to 3,500 lbs. per square foot, or from 17 lbs. to 23 lbs. per square inch," and that "the greatest intensity of the pressure on a rock foundation should at no point exceed one-eighth of the pressure which would crush the rock." Mr. Stoney remarks here—"Foundations should be placed sufficiently deep to protect them from the influence of frost or running water; nor should it be forgotten that excavations and pumping operations in the neighbourhood of buildings frequently cause subsidences of the foundation and superstructure," an advice that it would be well for architects and builders to always remember. The working load on rubble masonry, brickwork, or concrete, it is stated, rarely exceeds one-sixth of the crushing weight of the aggregate mass. General Morin stated that mortar should not be subject to a greater pressure

than one-tenth of its crushing weight. Our author observes—"The ashlar voussoirs of an arch, where the line of thrust may vary considerably from the calculated direction, should not be subjected to a greater (calculated) pressure than one-twentieth of that which would crush the stone. It is safe to apply the same rule to all ashlar work, as it is very difficult, if not impossible, to command a perfectly uniform pressure throughout the whole bed of each stone, and a slight inequality in the line of pressure may cause splintering or flushing at the joints."

The following are examples of working loads on masonry:—Pont y tu Pridd Bridge over the river Taff in Glamorganshire; date, 1750; engineer, Edwards; built with hard grey sandstone set in Aberthaw lime; load per square foot, 20½ tons. Lockwood Viaduct, on the Huddersfield and Sheffield Railway; date, 1849; engineer, Hawkshaw; material, flat-bedded sandstone rubble set in Weldon Wood lime; load per square foot, 8 tons. Britannia Bridge, Chester and Holyhead Railway; date, 1850; engineer, R. Stephenson; material, Anglesey limestone ashlar set in lime of the same stone; load per square foot, 16 tons. Saltash Bridge, Cornwall Railway; date, 1858; engineer, Brunel; material, granite ashlar set in cement; load per square foot, 10 tons. These several structures, differing widely in their working loads, also differ widely in their forms of construction. The first-named bridge is one of a single arch 140 ft. span, and the pressure was calculated at the crown of arch. The Lockwood Viaduct has semicircular arches 80 ft. span, with two oblique arches 40 ft. and 70 ft. respectively. The pressure was calculated at the base of the deepest piers, 7 ft. 7 in. thick at the base. The Britannia Bridge, the pressure was calculated at base of the Britannia Tower, founded on chlorite schist rock. The crushing weight of the limestone, we are told, was about 500 tons per square foot, and that in raising the Conway tube the pressure on the masonry of the abutments amounted to 50 tons per square foot. The Saltash Bridge, the pressure was calculated at base of the middle pier, constructed of ashlar masonry in a wrought-iron cylinder 37 ft. diameter and 96 ft. high upon a rock.

Of examples of working loads on brickwork, the three following will suffice. Railway viaduct in Birmingham, date, 1849; engineer, Brunel; material, red Birmingham brick, set in lias lime mortar; load per square foot, 7 tons. Charing-cross Railway; date, 1863; engineer, Hawkshaw; material, London paviers, set in mortar of 1 Portland cement + 2½ sand; load per square foot, 12 tons. Clifton Suspension Bridge, date, 1864; engineers, Hawkshaw and W. H. Barlow; material, Staffordshire blue brick, set in Portland cement; load per square foot, 10 tons. The concrete used at Charing-cross Bridge was made of Portland cement and Thames gravel, 1 + 7, and its working load per square foot is 8 tons. The concrete in the chimney at West Cumberland Hæmatite Iron Works has a base of 8 ft. thick, made with hydraulic lime; load per square foot, 2 tons. Base of St. Rollox chimney, Glasgow, composed of strong concrete, or béton, 6 ft. thick; load per square foot, 3 tons. The working load on the foundations at Charing-cross Bridge is 8 tons; the material in the foundation is what is called London clay,

and, of course, in this case, it is under the Thames. The construction is by lattice girders, resting on cast iron cylinders, 14 ft. below the ground, and 10 ft. diameter above, filled with Portland cement concrete, and brickwork, and sunk from 50 ft. to 70 ft. below Trinity high water, into the solid London clay. The friction of the cylinder is not taken into account on a bridge supposed loaded all over with locomotives. The friction in sinking each cylinder amounted to 150 tons. Taking this into account, it would reduce the pressure on the clay by about 1 ton per square foot.

The above examples of the working load on foundations, stone, brickwork, masonry, and concrete, are worthy of attention in connection with the crushing weight of the same material. Mr. Stoney's work affords a variety of examples, which the young engineer and architect will find of the greatest advantage in their early career.

We could have wished that the work contained more experiments and results in connection with the public works and building materials of this country; but, as it is, the book is, for all practical purposes at present, nearly an inexhaustive one, and we hope it may see many new and enlarged editions.

MUNICIPAL AND SANITARY ENGINEERS AND SURVEYORS.

A NEW association has been formed in London, the inaugural meeting of which was held on the 2nd. It owes its formation to the exertions of Mr. Lewis Angell, Mem. Inst. C.E., who is also the engineer of the West Ham Local Board. The objects of the society are: the "promotion and interchange among its members of that species of knowledge and practice which falls within the department of an engineer and surveyor engaged in the discharge of the duties imposed by the Public Health, Local Government, and other Sanitary Acts; the promotion of the professional interests of the members, the general promotion of the objects of sanitary science."

These objects are all good, and they can be readily supplemented by others not mentioned, but which will readily occur to the minds of the members. The association appears to have commenced its labors under favourable circumstances, a good gathering of engineers and surveyors from country districts having attended. A suggestion was thrown out that the association should take in the engineers and surveyors of Ireland and Scotland. We are of the opinion that distinct societies for Ireland and Scotland would be preferable, for many reasons. There still could be an interchange of thought and aught else that would be found useful. If the English association succeeds in absorbing one-half, or even one-third, of the municipal and local board surveyors and engineers of its own country, it will be a strong association. The powers conferred by the sanitary laws are not administered alike in the three kingdoms, and the duties of local board surveyors and engineers are not yet properly defined in regard to sanitary matters. Matters are shaping themselves in England gradually into form, but here in Ireland there is yet little short of a muddle. There should be an assimilation of the sanitary acts, so that all matters relating to the public health could be clearly understood, and ad-

ministered alike, or as nearly as circumstances permitted.

There is ample room and ample work for a vigorous association of municipal engineers and surveyors, if they will but do their duties uninfluenced by the boards they serve. At present professional men are too much under the power of members of vestries and local boards, and scarcely can express an honest opinion of their own on any important or sanitary question that arises. Some town surveyors are badgered and ordered about as if they were mere household slaves, and others play into the hands of the strongest faction in their respective boards. A reform is needed badly, and we have a strong hope that the new association in London will be useful in a variety of ways. As to this country, we fear we shall have to wait for some time before we see an association of municipal and sanitary engineers and surveyors formed. Though we prefer a native organization, we have no objection to offer to members of the Irish profession joining with their brethren in England, and helping them in carrying out the objects sought—objects which are to be commended, and which are worthy of support.

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood is minus this month its usual political article, which is generally forcible and well-written. A new story is commenced—"The Doctor Abroad." "The True Reformer" is continued, and the "Parisians," both of which are up to the mark. There is an article in this number entitled "The Members of Muirshire," which tells its own tale, as it is evidently a political satire on Scottish members and politics. Mr. Frederick Lockyer contributes some poetry, and the late Lord Lytton's novel, "Kenelm Chillingley," furnishes the subject of a very laudatory article, yet withal well written.

Fraser for this month is a varied and satisfactory number. Professor Max Muller supplies a critical analysis of Mr. Darwin's "Philosophy of Language." Miss Florence Nightingale contributes a paper under the title of "A Note of Interrogation": it is a kind and thoughtful exhortation on organised help and self help of religion and charity. "The Present Aspects of the Labour Question" is a sensible and fairly-written paper, by an Artisan. Professor Newman writes on "The Regeneration of Sunday," and Mr. Conway gives a picturesque description of Vienna—a place of more than ordinary interest just now in consequence of its exhibition. "The Peasantry of the South of England" is an article worthy of perusal, and seems to be written by one who knows his subject.

Tinsley is sparkling with its variety of tales. The illustrations are also excellent, and seem to have been improving gradually of late in their design and execution. "A Pair of Blue Eyes," and "Home, Sweet Home"—two admirable tales—are continued, and fully sustain their interest. The essays and other matter are all readable, which cannot be said of many articles scattered through the several monthlies.

The *Gentleman's* has a number of good articles, and its poetry is also good. Mr. Clarke continues his paper on "Shakespeare's Philosophers and Jesters." The writer shows much insight into character in dealing with the characters of the great dramatist. "Capital and Labour" form the theme of a paper by Mr. Hopkins, in which his views are pretty fairly and clearly discussed. "Clytie," a serial story, is told well and moves along towards its end with an attractive force. Lord Ravensworth contributes "A Voice from Poland," a poem of merit and of sympathy with a brave race.

Macmillan opens with another instalment of "Betsy Lee: a Fo'c's'le Yarn." It is full of humour and touches of true feeling of humble life. Mr. Black's "A Princess of Thule" promises to be a good story, and to equal if not exceed the popularity of his previous successful tales. Mr. Tom Hughes, M.P., contributes "Problems of Civilization," which are suggestive of thought and worthy of attention. "Niagara," by Prof. Tyndal, is a really good and instructive paper. "The Principle of Authority in Matters of Opinion," by Sedley Taylor, is an article worthy of perusal.

London Society is capital in illustration, and its prose articles, tales, and sketches are as a whole good. "No Intention" is continued, and promises to be a racy love story. "Sheridan in the Ascendant," by Percy Fitzgerald, deals with the late revival of our native dramatist's works. Mr. Charles Reade's "Simpleton" is not very bright or at all equal to the other tales of that writer.

Temple Bar has an excellent article on the late "Lord Lytton as a Dramatist." There are also good papers on "Northumberland House and the Percys," and "Charles Dickens." Mrs. Edwards's "Vagabond Heroine" continues well. Wilkie Collins's "New Magdalen" moves on rapidly in four chapters at a time. The other minor papers are of average merit.

Belgravia has both light and serious matter, and is in consequence instructive and amusing. "The Working of the Postal Telegraph," by Mr. Steinmetz, and "The Shah at Home in 1716," are two capital papers. George Augustus Sala contributes a "Delusive Directory," written with his usual characteristics. "Strangers and Pilgrims" continues well. "An Analysis of Charles Dickens's Nomenclature" is a clever and amusing paper. The matter of this month's number can all be commended, with the exception of the poetry, which is very watery indeed.

Cornhill furnishes a few very interesting contributions, which may be pronounced decidedly good. "The Sons of Ham," the paper on "Literary Ramblings in Bath," and "Louis Napoleon Painted by a Contemporary" are among the best. Justice is done to the late Emperor, chiefly as a member of the guild of literature. The serial story, "Zelda's Fortune," is a somewhat mysterious tale, but the lady readers of the magazine will no doubt find an interest in its evolutions.

St. Pauls presents a very fair freight this month in matter and workmanship. There is a rather elaborate article on George Eliot, being an estimate of that novelist's literary character. The paper on "The Penny Magazine" is most instructive. "Sancta Bega" is a good paper, and the serial tale is a striking and well-written one.

St. James's opens with its serial story, "The Cravens of Cravenscroft," which sustains its early promise. Sir G. L'Estrange contributes "Scraps from Recollection." Under a somewhat curious title, "Per Mare per Terras," the editor deals with the condition of the colonial empire and the duties of the mother country. "The Wreck of the Northfleet" is a tribute to the memory of the gallant captain who perished in that ill-fated vessel.

The *Fortnightly Review* opens with a paper by Professor Fawcett on "The Incidence of Local Taxation." It is a thoughtful and practical paper. "The Scientific Character of Spinoza's Philosophy" is the title of a paper by Mr. Frederick Pollock. The writer's success will be judged by different minds as a success and non-success. "Recent Progress in Weather Knowledge," by Mr. Scott, and "Mythology and Fairy Tales," by Dr. Lang, are praiseworthy contributions.

Colburn's New Monthly contains several instructive and pleasant papers. The Irish story, "Fairy Fenella," proceeds well. "The Curiosities of Bird Legislation," "Dr. Johnston," "Thomas Shadwell," and "Violette," a story of Versailles, are among the interesting papers worthy of note.

THE CORPORATION AND THE GAS QUESTION.

As we expected, the defeat of the Corporation Gas purchase and management bill gave rise to a perfect scene, with the usual accessories, on Cork-hill. The proceedings of the Council at the quarterly meeting ought to be stereotyped, and a copy of it sent to every member of parliament in the three kingdoms. Sir John Ramsden, the chairman of the select committee, must be amused by this time with the conduct of the promoters—those men whose "ordinary intelligence" is of such an extraordinary character. Their little game was, however, discovered in time, and the would-be jobbers and pensioners are deprived of their allowance. It is always the case with those who are in a state of insolvency to plunge deeper into debt, with the hope that some lucky chance at the eleventh hour may enable them to recover their lost position. The tide, however, did not return in time, so the project and the projectors were stranded and wrecked.

In opposing the Gas scheme of the Corporation, we did so, not because we believed that the management of the lighting of a city could not be regulated by a corporate body, or that it would not be judicious to entrust such an undertaking to a corporation. We opposed the bill because we knew it to be a swindle from first to last, and denounced it as such. We opposed it because the Corporation were committed to several other projects which it was neither able nor willing to carry out honestly. We opposed it as an ill-digested and gigantic job, which would have the effect of adding largely to the taxation of the city, which is bearing burdens that it is scarcely able to support. And last, we opposed it because its corporate promoters broke faith and trust with every other body of gentlemen they came in contact with, and shewed themselves as destitute of honour or principle as they were full of chicanery and deceit.

In respect to the defeated Gas scheme, it is well worth the attention of the citizens to read the opinions which one section of the Corporation holds of another. In fact it may be said that Mr. Dennehy's opinion is the opinion of the Corporation on itself, minus that of those "artful Cecils" who are always on the alert to turn every scheme to their own personal advantage. Mr. Dennehy, at the quarterly meeting, is reported to have said—

"The Committee of the House of Commons was quite right in rejecting the bill. They could not have come to any other conclusion. The duties of the Corporation were to supervise, and superintend, and direct the arrangement of matters of importance in the city, but it was not their province to become traders. The waterworks had been pointed to as a success under their management. Why, that was nothing but a financial muddle, and the citizens would find that out before long. The proposition to send the bill back before the committee was preposterous. Did the promoters of this bill think people were fools? Did they think people were absolutely fit for a lunatic asylum? They would laugh at the wrong side of their mouths very soon, when they were made to pay up the cost of promoting the scheme."

Mr. Vereker, in following Mr. Dennehy, characterised the Gas scheme as

"a great job, advanced by the self-sufficiency and ignorance of its promoters. No better indication of how it was regarded could be afforded than the fact that while the matter was in agitation the shares went up, but as soon as the committee decided against it they went rapidly down."

Mr. John Byrne, of course, is interested in getting the bill re-committed, and another long bill of parliamentary and law expenses incurred. He is, we know, a man of "ordinary intelligence," like those other gas directors whose wisdom he slighted in the manner that lawyers do their clients when there is an object to be obtained. Let us hear Mr. Dennehy again on the situation. He

"believed that the Gas Bill scheme fell through through the ignominy brought upon it by the evidence of the engineers who were examined in committee on behalf of the Corporation, and who were,

upon cross-examination, made to expose the fallacies of the project. The Corporation had already enough in its hands in the water works and several other undertakings to fully occupy its attention, if they were properly attended to, without being burdened with the Gas works. This Corporation was the leading representative body in Ireland, and ought not to be trailed any longer in the mud, by being brought before the House of Commons again, to be turned out."

We only wish we could subscribe fully to the last sentences of Mr. Dennehy's remarks. The Corporation of Dublin ought, by its position, to be a leading representative body, but it may thank its own members for the unenviable position it holds in comparison with other municipal bodies.

The Main Drainage Scheme will afford another opportunity for unlimited jobbery. There is hardly a project undertaken by the Corporation that does not cost a third more than it should; in some cases half as much again as the original estimate. We are told that a sum of £10,000 has already been expended upon the works at Newcomen Bridge. While members in the Council, contrary to the law, fish for and receive remuneration, how can the representation of this city in the Corporation be an honest and independent one? The law upon the subject should be rigidly enforced, and no member should be permitted to receive pay of any kind for services rendered to the Council. Unfortunately at present it is otherwise, and, as O'Connell used to say, a "coach and six" is driven through the acts of parliament. The real plotters and wire-pullers of projects in the Corporation are always absent on occasions when their presence would not be likely to redound to their peace of mind. There are, however, catspaws to take their places on the Gas question and other questions in which those influential and absent gentlemen take a great interest.

We hope the check the Corporation has received will lead to a little more caution and sense. So long, however, as the citizens tamely submit without remonstrance, they will be taxed to support visionary and unpractical schemes and palpable swindles, beginning in fraud or bankruptcy, and ending in ruin or shame.

ARCHITECTURAL LITIGATION.

WITH reference to the communication from the Birmingham Architectural Society which you have just received, I think it very desirable to make some observations. It is a matter in which the interests of all who engage in building operations are too deeply involved for us to adopt the suggestion therein made without some expression of our opinions on the subject, and as I have not sufficient confidence in my own oratorical powers to imagine that I could put forward, in the form of an ordinary speech, the various and contradictory considerations which have to be kept in view, I have ventured to write out my speech, both that it may be more worthy of your listening to it, and also that it may remain on record for future reference.

I am obliged to confess that, from my very imperfect knowledge, or, what would be a more correct description, my almost total ignorance of law, and its forms and processes, I labour under very great disadvantages. I am almost like one who should be called on to write a specification for a building, with little or no knowledge of the materials with which it was to be constructed. This would be easy enough to some specification writers—chiefly engineers—who in the absence of definite knowledge of the task they are endeavouring to perform, take refuge in the sweeping general clause, "The whole of the several works are to be performed with the very best materials, put together in the best and most workmanlike manner, to the satisfaction of the superintending architect." It is a pity that, having begun a specification

with some such clause as this, they do not stop there. It is then legally perfect. Every word added after such a clause tends only to diminish its force. They have any contractor, who should sign it, bound legally neck and heels, and everything that is added is either superfluous—or dangerous.

In the present case, I think it would be hardly sufficient for us, as a body of architects, to give solemn expression to the opinion—"That in future, litigation on matters connected with architecture or building should be conducted in the best possible manner, and to the entire satisfaction of architects, surveyors, and builders." We have no contract with the legislature—and we are fairly called on—it is our duty to state, as best we can, what we consider to be the course—what form of procedure we recommend—and what seems to us the best form of tribunal—and, at the risk of exposing my ignorance, I will proceed to state to the meeting the views that I have formed, from a somewhat extended consideration of the subject.

It may not be inconvenient to consider, first of all, the object which we, as architects, propose to ourselves—what it is that we complain of and wish to have reformed. It appears to me that our great want, and one which is in a manner peculiar to ourselves, is that of an intelligent and sympathetic tribunal. Our language is not understood, the force of the facts we detail is not appreciated, the very laws of our art—having their foundation in natural science, fall, when stated, on deaf ears. This is felt strongly by many of our most eminent judges, who will not hear a building case, from the simple fact that during the whole course of one, they feel as if they were groping in the dark. In England especially, such cases are almost universally remitted to arbitration. Judges will not hear them—and of the two, probably, a reference to arbitration is the sorer punishment to the unhappy litigants. Oh! the weary, wasted days of an arbitration!—the long sittings, the endless verbiage, the irregular and pointless discussions, the time spent about points that turn out to be worth nothing, the utter muddle in which each side presents its case, and the utter bewilderment of the unhappy arbitrators, who are trying to look wise, but are painfully conscious that if their state of internal puzzlement were only reflected on their countenances, they would be looking very like fools. Now, if it be possible for a professional architect to have such a feeling—and I am sure I am only giving the personal experience of most of us who have figured in the position when sitting as quasi judge,—the fact of the scene of the sitting being transferred to a superior court, and his acting as assessor to one of the superior judges, would not tend to do away with or lessen it. If such be the feeling, it is plain that, in addition to wanting professional assessors to try professional cases, we want something more, if the alteration is to be of any considerable advantage. Let us suppose an assessor seated by one of our judges; what can he do? The matter that is being tried before the judge, assessor, and jury is not the simple one of whether anything is due by the defendant, and if so, how much, but whether the injury for which the plaintiff claims money damages is included within any or all of the innumerable and infinitely varied pleas which his counsel have drawn up. The subject matter of the trial is not the facts of the case, but their applicability or non-applicability to a highly artificial statement of the possible legal results of them supposing that they did exist. Modern pleading is, therefore, varied in every possible form; in fact, a lawyer in drawing it up is like a fisherman preparing long lines—if they were a mile long, a hook would be fixed at every yard, so as not to lose even the slightest chance of catching a fish.

Now, all this should be done away with; the plaintiff in every case should be required to submit, with the summons to court, a full but plain statement and intelligible history of

• Paper read by Mr. James H. Owen, President, at the meeting of the Royal Institute of the Architects of Ireland, April 17th, 1873.

the facts on which the action is grounded, and the relief he seeks. This narrative should not be embellished, and rendered unintelligible by legal fictions—it should be simply such a statement of facts and estimate of the money value of injuries, or such other remedy as the case may suggest, as an ordinary educated man, able to write his own language clearly and intelligibly, could draw up, and with reference to it the functions of the solicitor and barrister should be confined to ascertaining from reading it, and from examination of the parties, that it is clear and intelligible—that it fully and truly states the facts, and that there is a case made out on which a court may fairly be asked to grant relief of some kind, or probably such relief, or thereabouts, as is demanded. I believe that such a document would be pretty much the same as the "Bill," which is the first stage in an equity suit. The defendant should be required in the same way to prepare his answer to the case stated by the plaintiff—if he has any—and if he has any counter case, to state it also, verifying his answer by oath. Each party should be at liberty by interrogatories to bring into the case any additional or explanatory matter, or to raise doubts or questions arising from the opponent's stated case, so that before a matter comes to trial, the judge and his assessor would have before them the whole case on both sides. Both would bring to the consideration of it in open court a full knowledge of what the facts were alleged to be on both sides, and would have had the opportunity of previously comparing and weighing the statements, and of preparing for the further hearing of the case, by consulting authorities and studying the general laws, either of Nature or the Nation, which were involved in the case. Thus far, the mode of procedure which I have here recommended, is borrowed from the Court of Equity; but having attained to this stage, it would appear to me to be very desirable to continue according to the practices of the courts of law. There is no process so effective as cross-examination for eliciting the suppressed facts and features of a statement. It may fail, but certainly when it fails, no other process would succeed—and the whole color and complexion of a series of facts may be changed by the omission or suppression of points, possibly in themselves very trifling and inconsiderable, which a cross-examination would elicit. Such an examination would be made, and listened to by a judge and assessor, who both of them have the whole case before them—and it is fair to take for granted, have previously mastered and possessed themselves fully of the whole subject under litigation—the examination in such a case would be more definite, more appreciated, and also more condensed. Each witness would be called only to fill up blanks in, and to confirm statements already before the court, provided he did not break down under cross-examination, and the notes to be taken by the presiding judge and assessor, instead of being encumbered with a mass of probably useless and irrelevant detail, would be confined to the effect of the examination as regards the statements already before them. Of course it would be impossible to examine and cross-examine as to every item in a builder's bill, but in practice where a bill is delivered and disputed, it is not the whole amount that is so, but only a portion of that amount, and the defences admit of classification in groups. We may suppose an account delivered which comprises in it every possible defect that a builder's bill can have—it is quite possible for the defendant in his reply to state with respect to certain specified items, that he owes nothing, inasmuch as the work is not done at all; as to others, that the work is badly done, or with bad materials, and that he claims a set-off for expense incurred, or to be incurred, in putting it to rights; as to a third set of items, that the works therein claimed for formed part of the contract work, and is paid for in the price stipulated therein; as to a fourth, that the quantities are excessive, or that the

prices are excessive—all these several defences would be given in full, and without going into the consideration of individual items, the facts which affect groups of them might be the subject of examination, just as well, if not better, in open court than before arbitrators. In many cases, I have no doubt that the necessity of preparing and submitting such an accurate and definite analysis of the account, and the necessary inference from it, of a counter account, would prevent the action getting beyond this, its preliminary stage, the parties having each other's case before them, and being thus forced into a mutual comparison of each other's statements, would necessarily gravitate towards a settlement, without further litigation. In cases where there were important and irreconcilable differences in quantities or in money value, it would be very desirable that the court should refer these matters to an experienced surveyor, who would examine and report to the court on oath, and be subject to cross-examination by both sides. It follows, almost as a matter of course, that in such cases a jury would be unnecessary, and a nuisance.

It would be, perhaps, a pity to abolish so venerable an institution as trial by jury, although recent experience in Ireland has given good reason to all who have the pure administration of justice at heart, to long for the time when we should only admire it as an institution of the past, and when every institution—even property itself—is on its trial, we must not forget that of the twofold objects of the institution, both have become obsolete. A jury is no longer a body of assessors, who are themselves witnesses as well as judges of the facts, nor are they empanelled as a defence against the unwarrantable stretch of arbitrary power. In substituting for the modern jury an assessor professionally experienced in the subject-matter of the dispute between the parties, the legal reformer would be restoring the essence, while abolishing the form.

Under the proposed system, the relief to be administered, both as to its nature and extent, would be left to the court, which would also be empowered to put the parties under such rules as would prevent further litigation, except in the way of appeal. The costs of actions would be at the discretion of the court, who would direct them to be paid in each case according to the merits of the litigant parties, following the principles which have dictated the existing regulations in courts of law, but freed from the hard and fast lines by which they are at present bound up, which in their application not unfrequently impose the penalty of costs upon the party who has really been the person aggrieved in the suit. Cases must be familiar to you all, where the amount recovered has been out of all proportion to what was claimed, but still something larger than the unlucky defendant's estimate of the guess which the enlightened jurymen would make, and he has consequently been mulcted in heavy costs as a punishment for resisting an unjust claim. Many an action now goes on because of this uncertainty. In the courts of the future, I hope it will be sufficient merely to acknowledge indebtedness, and to state the amount, which the plaintiff should be allowed the option of accepting, but when issue was once joined, he should be restricted to his "pound of flesh." The law should retract the offer formerly held out to him, and grant him no more or no less than he was able to satisfy the court he was entitled to, and this I consider to be strictly just. An amount pleaded by a defendant should be considered as to some extent an offer to settle the matter for so much. The tendency of most minds is to plead something more than what is supposed to be legitimately recoverable, but once declined, such an offer should be past reach or acceptance, like Shylock's refusal of the three thousand ducats—the unwise or over-grasping plaintiff should be held to his bond.

Having written so far, I ask myself what chance is there of having such a revolution effected? Just consider what it is that is

proposed. At present an action at law is an elaborate game, the main object of which is to gain a victory for one or other set of opposing lawyers, irrespective of the unfortunate clients. It is like a set of physicians disputing over the nature of the patient's complaint, and letting him die meanwhile. A non-suit will become an obsolete luxury—the facts will take the place of the law—and to the judge and assessor will be assigned the task of giving them proper hearing and interpretation; but, however remote such a state of things may be, it is still within the power of any of us who may be selected to arbitrate on any matter, to adopt the course of procedure which has been suggested, and in place of sitting listening to the confused statement of facts usually submitted to an arbitrator—and perhaps finding after the lapse of days, that some most material matter has been overlooked, and that the impressions up to that time made on your mind are seriously erroneous—insist on the plaintiff's case being fully and clearly placed before you in writing—send a copy of it to the defendant and require him to furnish an equally full and precise reply, stating all he has to say; you will then be able to grasp the whole case thoroughly, to call for further information and explanation, and sift the whole matter carefully and definitely, and probably conclude in a day's sitting what would otherwise be scarcely well opened in a week.

These are the considerations on which I heartily support the resolution which has been forwarded to us from Birmingham, while hoping and wishing that the reform may be carried out to a greater extent, and more thoroughly, than is therein expressed.

L A W.

THE DRAINAGE OF LOUGH ERNE.

COURT OF QUEEN'S BENCH—May 8.

(Before the Full Court.)

MANDAMUS.

The Queen at the prosecution of John Grey Vesey Porter v. Samuel Roberts, C.E.—Mr. Porter, Q.C., with whom was Mr. Holmes, instructed by Messrs. Longfield, Davidson and Kelly, on behalf of Mr. J. G. V. Porter, moved for a court order for a writ of mandamus directed to Mr. Roberts, commanding him as Government inspector to revise his report on the scheme submitted to him for the drainage of Lough Erne. Counsel moved on an affidavit stating that owing to frequent floods the waters of the Upper Lake rose 8 ft., and those of the Lower Lake upwards of 5 ft., by which 17,500 acres of arable land were flooded; that Mr. Porter then at an expense of nearly £100 had a scheme prepared by Mr. Lynam, C.E., which he forwarded to the Commissioners of Public Works, together with a memorial praying that a drainage district and drainage board might be formed to carry it into effect. The Commissioners sent down Mr. Roberts, who held a meeting at Enniskillen, and on the 30th of December last he made his report to the Commissioners, stating that, although the scheme would give security against the summer and autumn floods, it was inadequate to secure the adjoining lands from floods at other periods of the year. He, therefore, declined to approve of the scheme without extensive alteration. Mr. Porter and other proprietors were willing to make such alterations in their plans as Mr. Roberts might suggest.

Mr. Justice Fitzgerald said this appeared to be a case for the Board of Works, who were constituted protectors of the rights of ratepayers of the district. He should like to know what was the estimate of the entire cost of the scheme.

Mr. Porter said it was £100,000. The scheme proposed would give complete security against all summer and autumn floods, and reduce the winter floods to a maximum rise of 3 ft., and lands of grass and tillage to the extent of 17,500 acres would be benefited, and their rental increased by £7,510 a year, besides that the navigation of the upper and lower lakes improved, and that of 258 miles of canals opened.

The Lord Chief Justice suggested that a formal application should be made to the Commissioners of Public Works to call on Mr. Roberts to specify what alterations he required to be made in the plans.

The suggestion was acquiesced in, and no rule was made on the motion.

ESSEX BRIDGE.

A TEMPORARY wooden bridge is in course of construction, to be used during the rebuilding of the new bridge. The old piers of the present structure will be used for the foundations of the future bridge. The new erection will be according to the plans prepared by Mr. Bindon B. Stoney, the engineer to the Port and Docks Board. The arches of the new bridge will be elliptical, instead of semicircular, as at present. The new structure will be considerably wider than the present, and the approaches from either side will be nearly level with their respective streets. Wrought-iron parapets will be substituted for stone, and the cost of the new structure is estimated at £28,000, but we believe it will exceed that sum. The Main Drainage Committee propose to widen the quays on either side, from Eustace-street to Fishamble-street on the south, and from Swift's-row to Arran-street on the north. This is to suit the Main Drainage scheme. That the quays need a little widening between the points indicated, there exists no doubt, particularly on the south side of the river. The method, however, about to be adopted, all sensible men must condemn—the breadth of the river is to be diminished, to add to the width of the quays. If the river was not already an embanked one, with a beautiful line of quay walls, there might exist some reason for the procedure about to be adopted. In any other city in the kingdom having already a walled, tidal river, such as exists here, a similar act would not be tolerated. The house property on the narrowest portions of the south side is old and ruinous, and ought long since have been removed. In widening the quays of Dublin, it is the house property that should be pushed back, instead of the quay-walls pushed further into the river. We are certain that Mr. Stoney, in his first plan, never intended that such work should be accomplished. It is to the Corporation of Dublin that the citizens owe this so-called improvement, which gives them more roadway, at the cost of the river, and destroys the regular and beautiful continuity of our quay walls.

We will have something more to say on an early occasion upon Essex Bridge in general, and the Corporation improvements in particular.

ENAMELLING PAINTS.

NUMEROUS anti-corrosive paints and washes, and anti-dry-rot and anti-damp solutions have been announced during the last half century. Some of these much-desiderated articles have been partially successful, under peculiar conditions, but scarcely any of them have fulfilled the required purposes for which they are needed. Patents after patents have been granted, provisional and otherwise, and lawsuits and litigation on the head of several have resulted, with little profit to the patentees, and none at all to the public. People at last grew chary, when they were called upon to accept some new invention or introduction of articles or wares promising to supply their wants, and thus many useful, along with many useless materials, shared neglect alike. When a new material is now introduced to the public, it must be accompanied with credentials, or a character that will bear scrutiny and examination. Its introducer, patentee, or inventor must, at his own expense or trouble, have experimented upon, or tested, the real value and properties of the article he submits to the public for their acceptance. Mere word painting will not do in these days. As the taste of the pudding is in the eating, so the value of a new material must be in its practical and experimental use. Griffith's enamelling paint is now for some considerable time before the public, and from what we have been able to ascertain up to the present, it is fulfilling the conditions announced on its first introduction fairly enough to warrant its extended use. On several buildings, on the walls of

which it has been used, it has counteracted the effects of damp, preventing the penetration of moisture. It has likewise been effective on brick, plaster, and wood. On ships' bottoms which have been coated with this enamel paint, it has prevented oxidation, or corrosion, a most important matter, and one that cannot be too highly valued. It has the property of drying nearly as fast as it is applied, and a single coating appears to be equal in body to the ordinary paints. It is of two colours, white and chocolate, and when dry it forms a hard enamelled surface. Added to its other qualities, it is extremely light in weight, and in ordinary cases it does not require the employment of skilled labour in its application. The purposes to which it may be safely applied seem endless, but confined to the building world, they are numerous enough to afford a fair and impartial trial, which we hope this paint may obtain at the hands of our constituency in this country.

CIVIC LYRICS.—No. XXXVII.

ALDERMAN SCREWLOOSE.

An Alderman in Dublin once, who swore he killed Cock Robin,
But seemed to be a better shot at shooting tape and bobbin,
Came forward with a motion grand he took three months to frame,
But had he taken a twelvemonth it would be all the same.

This fat and flighty Alderman forget we never shall;
He lived in state when we were boys somewhere upon the Mall.

He built a stucco palace high, looked at by vulgar crowds,
Who said its owner's intellect, like it, was in the clouds.

This Alderman had got a head screwed loosely on his neck;
But still he managed, when in rage, to save it from swift wreck.

This was the most that he could do, for nature deemed it fit
To place upon his shoulders a head with little wit.

This Alderman he lent himself to projects and to tricks,
So no one wondered when he got bowled-out in politics;
Still praised by some and blamed by more, yet laughed at by them all,

'Twas human nature, Pat remarks, that Peter should cheat Paul.

This Alderman he thought, like more, that corporations should
Aye exist for other things than looking after mud.
All his motives clearly proved he looked on local acts
As handy, "home rule" ladders for climbing people's backs.

Some Aldermen are born fools, like other men we meet;
Some Connellors but act the fool—it keeps them on their feet;

But Dublin is the paradise of fools, and ever will
While "Simon Pures" and "Peter Simples" loaf upon Cook-hill!

CIVIS.

HOFFMANN KILN.

A LICENCE has been granted to the Munster Brick and Lime Company (Limited) to erect these kilns in an exclusive district comprised within portions of the counties of Tipperary and Kilkenny. The company have already commenced to erect their first kiln near Clonmel, under the superintendence of Mr. Charles Bagnell, C.E., by whom the Boston Hoffmann kiln in Dublin was built; and they have procured an admirable site for it in every respect. It is close to a magnificent limestone quarry, from which the stones can be put with the greatest convenience, and at a very trifling cost, directly into the kiln; and there will be besides a siding from the Southern Railway, which will run right round the kiln, and enable the lime to be sent direct by rail all over the country. In addition to these advantages, the company have made most satisfactory arrangements respecting the supply, for some years, of the necessary fuel to carry on operations; so that, with the raw material at a trifling cost, cheap fuel and labour, and a large demand for lime in the district, the Munster Company will commence work under the most favourable circumstances. Where limestone is convenient, the Hoffmann kiln presents considerable advantages, particularly in not requiring the stones to be broken before being put into the kiln, thus saving much labour; and in the extraordinary saving by its use in the cost

of fuel, which ranges from 60 to 80 per cent. as compared with the existing kilns.

We may mention that the kiln some time since erected by the Boston Lime Company at the Grand Canal Docks, has been sold to Messrs. Scovell and Nugent of this city.

NEW HALL FOR THE CURRIERS' COMPANY, LONDON.

THE memorial stone of a new hall for the Curriers' Company has been laid in London-wall, City, by the master of the guild, Mr. John Loat. It is to be in the Tudor Gothic style, built with white brick, with stone dressings. The architect is Mr. John Belcher, and the builders Messrs. Perry. The old hall on the same site has been taken down, with some adjoining houses. A bottle containing coins, a copy each of the *Times* and *City Press*, and a scroll on which were inscribed some brief historical facts concerning the former halls of the company, was placed in a cavity of the stone. The document referred to also bore the names of the present governing body of the curriers, namely—Mr. Loat, master; Mr. E. S. Norris and Mr. R. Chadwick, wardens; the court of assistants: Mr. T. Husband, Mr. H. Brayne, Mr. C. Loat, Mr. W. Smerdon, Mr. H. Jones, Mr. A. Nesbitt, Mr. J. Birkitt, Mr. J. R. Carr, Mr. S. T. Jones, Mr. S. Harris, Mr. T. Pillow, and Mr. C. Carr; Mr. E. Burkitt, clerk. The stone was lowered to its place, the master spread the mortar with a silver trowel, applied the level, gave the orthodox taps with the mallet, and then declared the stone to be duly and truly laid, taking occasion, in the absence of a chaplain, to invoke the blessing of the Great Architect of the universe upon the work.

The Master then gave an address, from which it appeared that the Curriers' Company was incorporated by King James the First, as "the Master, Wardens, and Commonalty of the Art or Mystery of Curriers of the City of London." The company was spoken of in the chronicles of the City as early as 1363, when they had combined as a "guild," and at that time must have held some position, for they were enabled to give "five marks to Edward the Third towards the wars he was then carrying on against the French," and some few years after they became a guild in the conventual church of Whitefriars, Fleet-street. The company must have also held some important position in the City, for in 1376 they elected two members to the Common Council. From that date till the year 1545 there are no particulars in the history of the company of any note to be relied upon; and, doubtless, in the Great Fire of London the company lost the greater part of their archives. In 1545 the company would appear to have been in a prosperous state, for they then contributed £20 towards the purchasing a supply of wheat in a season of famine, an act of charity well deserving of notice. Under Edward the Third the company purchased of his Majesty £1 6s. 8d. per annum, in rents, and at that time disbursed in pensions to poor brethren, £2 12s., and in alms, &c., £2 10s. Considering the age, and the value of money at that time, the company must have been possessed of considerable funds. The incorporation of the company by King James the First took place on June 12th, 1605. In the old drawing-room of the company there was the inscription that the charter granted by James was renewed in 1642. In 1665, when the companies laid up coals against the inclement season, the Curriers purchased eleven chaldrons; and another entry in their books showed that in 1612-13, in association with the Vintners' Company, they subscribed £44 to purchase a share of some of the *Irish estates*. The first hall was burnt down in the Great Fire, 1666, and a new hall was erected in 1670. After remaining 150 years, this hall was taken down, in 1820, and another hall erected the same year, which remained until a few months ago, when, from the decaying

state of several of the houses and buildings, it was considered necessary that they should be removed, six of the houses having remained standing since their erection in 1670.

IN THE MARKET.

SEVERAL shares in the Self-Reliance and Spontaneous-Combustion Gas Consumers' Company. No ready money offer will be overlooked. The holders are retiring from business, owing to urgent reasons.

A capital chairman for any corporation really desiring the services of one well up in floating public companies and other business of that sort. Would be a valuable acquisition to any raw company needing the services of a standing chimney ornament. Has some brass in his pocket as well as in his face.

The carcasses of a number of new buildings, with the prepared materials of a splendid conservatory. The owner, from a sudden reverse of fortune and ill health, has to quit the country.

A lot of waste paper (about two tons), being the residue of a late audit. None but paper-makers will be treated with, and the sale will be conditional on the purchaser beating the material into pulp immediately after the purchase.

Must be sold and carted away instant, 100 tons of the best city scavage. The greater portion is first-rate manure, well fitted for top-dressing and turnip crops. The rapid approach of an Asiatic cholera renders it necessary that its removal should be as expeditious as possible.

A number of hopper-barges, designed by a late eminent municipal engineer. To be sold at the price of the materials. Well fitted for firewood.

A series of unpremiated designs for public bridges, statues, fountains, mortuaries, convalescent hospitals, ambulances, and other sundry things. A reduction will be made in favour of poor scholars and young assistant architects. As the designs were never carried out, they can be used again by a professional purchaser.

Just disengaged, an active parliamentary law agent. His late employers can well recommend him. Well up in municipal law and the taking out of quantities. Has great experience in drafting bills for public improvement and private accommodation.

An order for several miles of metal-piping, pumping machinery, manhole-grating, and sundry other fixings connected with a great drainage project. The order for the supply of the above will be secured and given to any English or Scotch contractor who will agree to give a liberal per-centage commission. N.B.—No Irish need apply!

Numerous other matters will be disposed of, the particulars of which may be learned on application "On 'Change," in Dame-street, or any other wide-awake and business thoroughfare. Hours from twelve till two. Sale peremptory. No puffing allowed.

THE SOCIETY OF ARTS.

A PAPER "On Improvements in the Manufacture of Gun Cotton" was read by Mr. S. J. Mackie at a meeting of this society a few days since. The author, after giving a closely summarised account of the main points of manufacturing interest in the history of gun cotton, proceeded to describe in considerable detail the proposed arrangement of the Patent Cotton Gunpowder Company's works just licensed at Faversham, and the machinery and processes to be there employed. He dwelt very strongly on the importance of reducing the gun cotton to an impalpable powder, and thus crushing out every particle of fibre, so that free acid could find no cavity to linger in. Pulping would not effect this;

and the getting rid of all acidity in the gun cotton was a most essential act. The care taken to provide for the isolation of the store magazines and to cut off lateral effects, in the event of an explosion, by sinking the magazines below the surface of the ground, and surrounding each by a circular water-ditch, was also mentioned, the author adding his own testimony to the efficacy of the control effected by the element of sugar, introduced by Mr. Punshon, whose patents the company have acquired. Mr. Nash, the solicitor of the Stowmarket Gun Cotton Company, Professor Abel, Captain Jones, R.A., Mr. Hale, Mr. Botley, and others took part in the discussion, Professor Abel expressing his gratification at the sterling advocacy of gun cotton which Mr. Mackie had given, and criticising in an able speech various points of scientific interest which had been brought forward in the paper.

FLINT IMPLEMENTS.

At a meeting of the Victoria (Philosophical) Institute a paper was read by Mr. W. D. Michel "On the Flint Implements of the Drift," which was illustrated both by diagrams and specimens. In it he maintained that the flint flakes of the first palæolithic age were naturally formed, whilst only those of the second age were the work of man. Mr. J. Evans commenced the discussion, and was followed by Mr. Witley, who drew attention to the large beds of flint flakes of the first age, which formed a regular geological stratum extending through England to the north of Ireland, and through Ireland to Cork. He had found a stratum of them 6 ft. thick in Belgium. Dr. Carpenter, F.R.S., Mr. Borlase, and Professor Tennant joined in the discussion, which was brought to a conclusion by the chairman. The flakes and implements will be on view at the rooms of the institute, 8 Adelphi-terrace, Strand, London.

MORE LIGHT AND LESS GAS.

AN EYE-OPENER.

When "Jack-in-the-Box" was asked with what favour
The citizens looked on the Gas Purchase Bill,
He swore that their wise and prudent behaviour
Shewed more light was wanted, and weight on Cork-hill.

"More light to Cork-hill and weight to the city,
That's sure," said the Chair, "though the bill should not
pass.

On paying your costs you'll find this Committee
Gives Cork-hill more light while it cuts off its gas."

PRINTER'S DEVIL.

A TRADES GUILD OF LEARNING.

EFFORTS are being made in London to establish what is called a Trades Guild of Learning. The objects have our entire sympathy, though we cannot help thinking that the proper way to make the movement a success would be to bring some parliamentary action to bear upon the City companies of London. These companies are the ancient guilds of trade, and the enormous wealth that they collectively possess should be utilised for the purposes proposed by those engaged in the formation of a Trades Guild of Learning. It is true the City companies of London are beginning to move a little in the matter of technical education, but these advances are but slow and very small in extent as yet. At a meeting held a few days since at the Artisans' Club, Newman-street, Oxford-street, the Rev. H. Solly in the chair, several representatives of the trades attended, among whom were printers, elastic web weavers, cabinet makers, die sinkers, engineers, zinc workers, house decorators, plasterers, carpenters and joiners, watchcase makers, sawyers, goldsmiths and jewellers, engravers, enamelers, architects, &c.

Reports of preliminary meetings held to promote the formation of the guild were circulated in pamphlet form at the meet-

ing, and from these it appears the object of the present movement is "to promote the delivery of lectures and the formation of classes to assist members of trade societies and other skilled workmen in acquiring a knowledge of history, political economy, and technical education, as well as of literature, science, and art generally. In order to carry out this scheme, it is proposed that the various trade societies in the United Kingdom should be invited to connect themselves with the guild and pay a small annual sum, which would give the members admission to certain courses of lectures and classes, and also to libraries, reading-rooms, discussions, and social meetings.

The Chairman, in opening the proceedings, stated that at a preliminary meeting held in the Rooms of the Working Men's Club and Institute Union, Strand, an address was delivered by James Stuart, M.A., of Trinity College, Cambridge, on the subject of University education, and how it might be made available to the middle and working classes. Mr. Stuart advocated the establishment of a trades guild of learning. At the meeting referred to a provisional committee was appointed, and active measures had since been taken to establish the guild. Resolutions approving of the scheme had been passed by the counsel of the trades' delegates, and letters had been received from the Vice-Chancellor at Cambridge, Mr. J. G. Buckmaster (of the Science and Art Department, South Kensington), Mr. J. Stuart, M.A., and the Rev. J. B. Paton, who was at the head of the Congregational College, Nottingham, all in support of the proposed guild.

After some discussion, Mr. Savage moved the following resolution:—

"That in the present defective state of technical and higher education for the workman, no adequate provision having been made either by the State or private endeavour, this meeting hails with satisfaction the proposal to form a trades guild of learning to co-operate with the University of Cambridge and other parties willing to aid in the education of the people."

This resolution was seconded by Mr. Galbraith, and carried unanimously. It was further resolved to appoint a committee to carry the resolution into practical effect.

How long shall we have to wait in this city before the proclaimed friends of the working men move in their interest? We have clerics and laymen in our midst with plenty of time on hands, and means to do good irrespective of sect or party. The trades, however, should make a move themselves.

THE CRAMPTON MONUMENT.

THE state of this memorial for a considerable time past is a disgrace to the city. We believe we have directed attention to this fountain long since, but nothing has been done. Where are the admirers of the late Sir Philip Crampton? Do his professional brethren forget that there was once such a man in the city, and that they were proud of his reputation? Better that this memorial should at once be removed if the purposes for which it was erected are ignored. A correspondent, writing in a contemporary, remarks:—

"No drop of water flows from the four sea monsters' heads; no trace of moisture can be discerned in the hollow of the four conch shells; squalid and uncared for it stands revealed a type not of 'health and usefulness,' but of improvidence and neglect. Though, from its original construction, but little fitted to fulfil the conditions of its too florid inscription, it might still be made to subserve its original intention. Surely there are some of the friends and admirers of the late Sir Philip Crampton still in existence who might, by a slight pecuniary sacrifice, make provision for a supply of water, and thus render their memorial a source of utility in a neighbourhood where a supply of the pure element seems much wanting, and at the same time rescue the monument itself, and the memory of the eminent man in whose honour it was erected, from that ridicule which must ever attach to high pretensions when accompanied by low results."

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

GABBY-STREET—(second visit.)

IN referring to our note-book we found that our first visit to this quarter was a sectional and unfinished sketch, and that the older portion was left completely untouched. Olden Gabby-street and modern Gabby-street differ much in their features and histories. The former has witnessed stirring times, and its dwellings, though now dropping into decay and ruin, housed men who have written their names somewhat deep on their country's tablets, where they still remain for good or for evil. Like other quarters of this unknown city, this portion we traverse to-day has suffered sorely and long. Its rise in affluence and fashion was rapid, and its fall has been rapid. Wealth once reigned here. Merchant princes had their warehouses and counting-houses here, and, unlike modern practice, the city merchant was content to dwell throughout the year above his counting-house, school his children in the neighbourhood, and give the benefit of his custom to his neighbours in the vicinity. Celebrated classical and mercantile academies were out and about this quarter and in this thoroughfare, and here no inconsiderable quota of the literature of the eighteenth century flourished, and which had not yet died out during our early recollections in the present century. We should, however, leave it to our venerable cicerone the "Oldest Inhabitant," who never disappoints us by the breaking of his engagement to meet us at the appointed hour and place.

"'Tis a melancholy change indeed, sir, that this street has undergone since I walked it first. The fine old red-brick houses, whose walls are from eighteen to twenty inches thick at top, it is a sad spectacle to see the ruin and neglect that have overtaken them! I will point them out to you as we go along; a few of them still remain on either side between Staple-street and Broker-street.

"That old house, once numbered 28, was where the printer of George Semple's work on 'Building in Water' lived—a curious old book, sir, on bridge-building, building in general, and Essex Bridge in particular, which ought to excite some interest now that this same bridge is being demolished to make way for what are called *improvements*. I understand, sir, the builders of the new bridge will let the old piers stand. They are wise in their generation in prudently acting thus, for I question much if they uprooted the old piers that Semple so solidly constructed they could, with all their modern appliances, construct a better foundation than what at present exists. I am not aware, sir, whether Semple left any family, or if any of his descendants are still to be found in this city. George Semple's father was a building operative, and the architect's brother, John, assisted the former in the works at Essex Bridge. My father remembered the old architect, whose fame was widely known in his day. A story was current in my early days about Sir Humphrey Jervis, which I believe to be a fact. That worthy commenced to build a bridge, towards the end of the seventeenth century, on the site of the present Essex Bridge; but the citizens prophesied its fall from the unholiness that signalised its construction. The stones of St. Mary's Abbey were used in the building of the structure; but in a few short years a high tide, coming concurrently with a great land flood, undermined one of the piers, and swept the arch along with it. A hackney coach, with horses and driver, was carried down the river; and the flood rose to such a great height that boats plied in several of the low parts of the city, on a sheet of water parlour-floor high.

"Early in the present century, sir, this street was noted for the residence of the

famous Watty Cox, who kept his printing and bookselling establishment at 150, higher up. It was here that he published his celebrated *Irish Magazine*, or *Monthly Asylum for Neglected Biography*. His magazine, however, was not the only publications he issued from his head-quarters. Caricatures, squibs, lampoons, letters, fly sheets, and sundry and several other tracts of a most galling and satirical nature were issued by Watty, in defiance of law and order, and for the purpose of persecuting the loyalists of the day. Though often indicted, fined, imprisoned, pilloried, he continued, in prison and out of prison, as contumacious as ever. He possessed a wonderful fund of information on public matters, and managed to worm out important Castle secrets, which he ventilated with a vengeance. He lashed friends as well as foes when he thought that a reminder was necessary to keep them to their duty. His great target was the Town Major, whose life, career, and actions was a perfect stock in trade to the *Irish Magazine*. 'Con, the Daggerman,' i.e., Frederick William Conway, of the *Weekly Messenger*, and subsequently of the *Evening Post*; John Claudius Beresford, Major Swan, and a number of the Corporation worthies of that day, furnished food for the pen of Cox and his assistants. Cox was a clever gunsmith before he took to literature as a profession, and, it is said, in 1798 and previously, enjoyed the confidence of the leaders of the 'United Irishmen.' It is certain that he had close relations and correspondence with Arthur O'Connor, Lord Edward Fitzgerald, the Emmets, and Dr. MacNevin. Of all his prosecutions, the most remarkable was that for which he was tried at the King's Bench in 1811. The case was that of libel, and it arose from the publishing of an article in the *Irish Magazine*, entitled 'THE PAINTER CUT!!! A Vision'; it was signed 'Orellana.' Cox was tried three times on the head of this libel. The second trial was for a republication, and an error having been detected by his counsel, which constituted a legal objection, a third trial took place. O'Connell and Leonard M'Nally were his counsel. Cox had for his judges Lord Norbury and Baron George. O'Connell on the last trial made a most ingenious defence for his client, but notwithstanding that, Cox was found guilty, and sentenced to be imprisoned for one year, and to stand in the pillory for one hour in the public street. The complete history of the life and times of Watty Cox would fill many volumes, and if even confined only to his own actions, it would make a portly book. Watty had to do more than once with the fling off the head of his Majesty in Hogg-green, and of blowing him up and tarring his horse's body. After carrying on his magazine for several years, Cox finally accepted a pension for his silence, but was never known to betray any of his colleagues. In his last years he was fond of mixing in the sports and pastimes of the people, and was in the habit of frequenting the May sports at Pinglas. Indeed, I believe he resided in that village for some time. Some house property belonged to him for a short period in the northern suburbs, but it eventually passed out of his hands. Poor Cox, sir, died in humble circumstances many years since, somewhere in Bridget-street, if I remember rightly.

"Within two or three doors of that large recessed brick house, the publishers of Wills' 'Lives of Illustrious Irishmen' lived. The author of these volumes was a clever and genial Irish cleric, and a true poet. You are old enough yourself, Mr. O'Flanagan, to remember the racy effusions of 'J.U.U.' in the pages of the first *Dublin Penny Journal*, and subsequently side by side with O'Donovan, Petrie, Carleton, Hickey, Ettingsall, Mangin, and several others, in the columns of the *Irish Penny Journal*. I suppose you have read the 'Minstrel's Walk' of Wills. Old as I am, I cannot read that poem, Sir, without a flood of recollection welling up, and a tear or two trickling down the deep furrows of my aged and withered cheeks.

"Opposite Staffa-street, where a noted

timber yard existed once, an eccentric Irish carver, of French extraction, lived, and had his workshop. The carver was a poet to boot, and was patronised by an Israelite firm, who wished to sing the praises of their shoddy garments. The effusions of the poetical carver afforded much humour to the citizens, as they illustrated the wear and tear of the garments. One morning, when in the zenith of his poetical fame, the carver received a Mosaic edict, telling him his services would in future be dispensed with. The poet, wishing to add to his income, had made a second engagement with a rival firm, to sound the praises of their tweeds and broad cloths, and this coming to the ear of his first patrons, they determined upon discharging him at a moment's notice. The poet, however, was equal to the occasion, and sent in his bill to his Israelite employers for the balance of a three years' engagement. A lawsuit was the result, which gave infinite amusement to the wits of the city. The tailor and draper poet was immortalised, and the Jew had to compromise with the Gentile for loss of service. The carver, for some time after, pitched in antagonistically to the Jews, and celebrated their tortuous ways in his rhyming rhapsodies for the Christian establishment. Half a century ago, sir, cork cutting and wine bottling was in a flourishing state in this street, but it has all but died out now. There were wine merchants here some years ago, whose descendants had settled down in the city at the time of the first Huguenot flight. Their country might be read in their names, but they have all died out. Coach makers, builders, wine merchants, publishers, cork cutters, all have cut this quarter, save the miserable vestige of a trade that will soon be unable to reflect its shadow. Old Gabby-street was once somebody's street, it is now everybody's street, and all its distinguishing characteristics are fled. After Burgundy came buttermilk, and then hydropathics and old rags. Grand old mansions were stripped of their panelled wainscoting, iron railings pulled down, fronts of houses fitted out for gimcrack shops, and Babel inaugurated, to the discomfort and the disgust of the many. The head of the street was lopped off and defaced, to accommodate the middle, and the middle is doomed to be kicked by the vamped-up understanding of the lower extremities. Aesop's Fable is illustrated in the modern vagaries of Gabby-street as a whole. The members of the body have fallen out, and refuse to perform their allotted functions. *Respicere finem* is all that need be said at present.

"A quarter of a century ago, sir, I had some hope that this historic portion of the street would not go to the dogs. A few sturdy capitalists, with some brains and money, started some new industries here. Irish Roman Cement, Plaster of Paris, Gypsum, &c., began to look up in consequence, but, alas! the prospect sickened and died out. An honest attempt was also made to establish a match making manufactory, but the lights were put out at the first blast of disappointment. My heart sickens within me when I count up the catalogue of failures, many of which deserved to succeed, many more which did not, for they were not honest in intention. Poor forlorn Old Gabby-street, thou once had a hearty and jocund voice, when my days were young. I have lived to see thee ruined and dilapidated, despised and in dirt, but as wretched as thou art, I hope I shall have shuffled off the mortal coil before thou art tenantless. Live on, old street, as long as thou art let, and may thy dwellers 'scape the greedy clutches of the broker fraternity on thy hips. If the leeches once get into possession, thy epitaph is written. Excuse my wanderings, sir, and reflections; old age, like youth, must have its fling, and olden memories bring olden feelings, which are hard to keep from mastering one's self-possession."

Thus ended the story of our second visit, which, according to our friend, the Oldest Inhabitant, needs a sequel, which he may supply on a future occasion.

THE PRESENT POSITION OF GOTHIC ARCHITECTURE.*

(Concluded from page 127.)

To come back to the more practical question, however—what are the shortcomings and what the needs of this Gothic architecture of ours, the extension of which I am sure is anxiously desired by most, if not all, of us?

One of the most prominent defects in our present system of working is, the want of some united action between us. Every architect now doeth whatsoever seemeth good in his own eyes (provided his clients allow him) in the matter of style, and too often indulges in what is fantastic and eccentric, in the hope of being original. In the case of men of great ability, this unlimited freedom is not so objectionable, as they have the faculty of seeing what is appropriate and in harmony with the spirit of their designs. With less skilful designers, however, the results arising from this condition of things are too often glaringly crude and incongruous.

Now, if some recognised agreement existed amongst us as to the best path to pursue, this condition of things could not exist, and we might entertain a reasonable hope of seeing a general movement of progress all along the line, and not, as at present, fitfully and in various directions.

Although it is undesirable, if indeed it be possible, that the individuality of the designer should be lost; nevertheless, there exists among certain schools a pernicious habit of placing the artist before the art in the case of a few favourite men. This is manifestly wrong: the elevation of the art should be our first consideration, the individuality of the artist second. We need, therefore, I think, some generally accepted code of laws and precedents to govern and direct our efforts. Let us, for example, agree upon some particular phase of mediæval art; and taking that as our point of departure, extend and develop it until it becomes capable of answering all the numerous requirements of our time. Let us, as the style expands, engraft upon it such features from other sources as we may see fit, carefully keeping them subordinate to and in harmony with the ruling principles of the master style.

There is another point in which the Gothic school runs into extreme, and that is in the quality of what I must term "quaintness," for want of a better title. That this quality is possessed in a very large degree by most mediæval buildings, is unquestionable—indeed appears to be inseparable from them. It must be remembered, however, that this is mostly the result of accident and of the mellowing effects of time; and that, do what we will, we can never impart to our new buildings the picturesqueness of the old work. Indeed in some ancient buildings there is nothing to recommend them but their age and the harmonizing influence of time; yet what a wondrous charm hangs about them! As the poet says—

..... "There is a power
And magic in the ruined battlement,
To which the palace of the present hour
Must yield its pomp and wait till ages are its dower."

It is a grave question if far too much time and thought are not thrown away in the effort to produce these effects, and if internal convenience is not too often sacrificed in the attempt. If the results of this were discernible in greater beauty of form, or in a more perfect proportion of parts, there would be nothing to say against it; but unfortunately the uppermost thought in the artist's mind too often appears to be merely the desire to make his work quaint and eccentric—very much lower qualities than those just mentioned. Indeed it is questionable if this does not tend to lessen our sympathy with really beautiful form, for there is a large mixture of coarseness running through it. Certainly some of our latest buildings in Gothic seem to have been designed with

but little regard to either beauty or proportion.

Quaintness has a constant tendency to degenerate into mere ugliness, and it is to be feared there is much truth in the accusation of Professor Kerr, that there exists an incredible worship of the ugly amongst us.

Just at present, too, to the best of my judgment, this strange mania is rather on the increase than otherwise. The "old china style," if I may so term it, is spreading amongst us, and we see men search every quarter of the globe for examples of quaint, curious, and ugly objects to copy from.

The present attempts to introduce the long, square-headed windows and broken pedimented gables of Queen Anne's reign, the lumpy furniture of the Cromwellian era, and the ingenious but semi-barbaric ornament of China and Japan, indicate the extravagant lengths to which a certain school is inclined to go in its search after novelty.

While the progress of the revived style has been, on the whole, continuous and well marked with respect to ecclesiastical architecture, it must be confessed that we have not made nearly so much advance with our secular buildings. Here we are more left to our own resources not having so many examples to guide us, and being obliged to initiate buildings in the new style of a type and for purposes unknown in those more primitive times. In some of the country mansions recently erected, however, the style has been adapted to the requirements of the case with the utmost felicity. It is in our civic architecture that our failures have been most conspicuous. Too many of our hotels, railway stations, club-houses, &c., are but shells of the type of ordinary town house, with a thin outward veneer of Gothic detail altogether wanting in the true sentiment of the style. It is here, too, that those vagaries of which we have been speaking are to be found in the greatest abundance, and where there is most need of some more settled and acknowledged art authority to direct it.

In one very conspicuous instance our revived Gothic has not been found equal to the occasion. I allude, of course, to Mr. Street's designs for the new Law Courts. If ever there was a signal opportunity for displaying the capabilities of the style, this was the one; and I think I speak the general verdict of the profession when I say that the result is a failure. The building, if executed as designed will be feeble and disjointed, lamentably wanting in that grandeur of conception and unity of parts which should characterise a great public edifice. I say this with regret, and with a high respect for Mr. Street's great talents, and for the eminent services he has rendered mediæval art.

Let us not, however, be too much discouraged by this failure; it does not prove that the revived Gothic is unsuited to modern wants, still less that it is worked out. I believe the style to be still young and full of vigour; but we must look around us and note our shortcomings well, so that we may rise through our very failures to higher things.

The most urgent need of the style at present, then, appears to be more uniform and combined action on the part of its professors, guided by a recognised and accepted series of art-canon, with sufficient influence to curtail the vagaries and eccentricities that at present disfigure it. Thus we shall form a common platform on which to work in the development of that ideal architecture which earnest men strive for in the hope of seeing it realised in the fulness of time.

In conclusion, with your permission, I will again quote from Professor Scott's lecture the following able summary of what I have so vaguely and indifferently endeavoured to express to you. Referring to the revival, he says:—"Its success has been indeed enormous; yet its failures and drawbacks have been in proportion to it. Its artistic merits have been limited to those who have followed it up with an earnest and generous en-

thusiasm, for it has unhappily been practically followed up by a mixed multitude who view it as a fashion of the day, by which professional practice is to be obtained; but are devoid of all ardour and love for what they are engaged upon. Nor is this the only drawback to the Gothic Revival. It suffers from a degree of capriciousness even among its abler and more art-loving followers, who, jealous perhaps or contemptuous of others, refuse to co-operate in any steady purpose, and who, morbidly keen in their perception of beauty are apt to follow momentary fancies—now favouring one type, and now another—and, perhaps, reviving styles little allied to their purpose, as if the object of the age were to revive just for revival's sake, rather than to gather in those extraneous beauties to enrich the resources and to widen the capabilities of one received style. This tendency seems to threaten the noble movement with premature decay, though I do trust there remain earnestness and steadiness of heart enough to avert this danger, and to guide these artistic strivings into a healthy channel, and cause them to add new life to the general movement."

SANITARY LEGISLATION.

At the final lecture of the series on sanitary matters, delivered at the Royal Dublin Society House, Mr. Robert O'Brien Furlong, A.M., B.L., made some sensible remarks concerning the state of the sanitary laws and their application in this country. He well might point to the confused state of the sanitary laws in this city, with its numberless Corporate bye-laws, its forty-nine local acts, to be guided or misguided by, eleven police acts, with sanitary provisions, and with nearly twenty general acts. Upwards, perhaps, of seventy statutes have to be waded through before the machinery can be set in motion. Sanitary prosecutions offered a rare opportunity for quibbling lawyers, and led to many postponements of important cases, to the more cost of clients, and to the danger of the public health. The following is the conclusion of Mr. Furlong's lecture:—

"Some people were of opinion that the sanitary authority in small towns should be transferred from the local authorities to the Poor Law guardians. With a view of illustrating how the important sanitary law was administered by the local authorities, he mentioned that in the 75 towns under the Towns Improvement Act the total expenditure for sanitary purposes in the year was £1,567. In Munster the sum was £79, and in Connaught £15. In Parsonstown, an important place, with 5,000 inhabitants, a sum of 4s. had been expended for sanitary purposes. In ten corporate towns, with 416,000 inhabitants, £2,390 had been expended, while in Dublin the total amount spent by the Public Health Committee was £2,050—nearly one thousand pounds less than was expended on the Fire Brigade. A gentleman had laid before him a plan for maintaining the Fire Brigade for £600, which at present costs over £3,000. That the defects in the sanitary state of Dublin were not altogether due to the want of local powers by the Corporation, was quite clear to any one who took the trouble of inquiring what powers they possessed. The medical officer of the city (Dr. Mapother), referring to the Dublin Improvement Act of 1864, had said so simple were the provisions of the act that it had left scarcely anything to be desired, and that it would be the fault of the Corporation if substantial benefits did not soon follow. What had all this come to? Where were the benefits? Mr. Furlong referred to the regulations issued by the Public Health Committee, and asked what more could we want if these regulations were enforced? Were they enforced in the miserable house where Dr. Moore found 83 human beings, six of them in fever? Mr. Norwood, a member of the Public Health Committee, said there were 9300 tenements in the city, with an average of 11 souls each. What was the sanitary staff whose duty it was to inspect and report upon the condition of these houses? It consisted of 14 men, all members of the Metropolitan Police Force, under the control of two masters. The medical officer in Dublin had a salary of £120 a year; in Glasgow he had between £800 and £1,000. Then there were in other places epidemic inspectors, and the instructions given to these in-

* Paper read by Mr. W. M. Mitchell, at meeting of Architectural Association of Ireland, April 24th, 1873.

spectors might be studied with advantage by the Dublin Corporation. In Glasgow there were also female inspectors, who instructed the people in habits of cleanliness. Few people in Dublin were aware that there was a penalty of 20s. per day for not having all stable manure removed and deodorised before seven o'clock in the morning; yet there was such a regulation. Nothing could bring law more into contempt than to frame rules which were not carried out. Mr. Furlong then referred to the many sanitary matters in which the city is deficient, and said the neglect of these matters arose, to a great extent, from the absence of intelligent and well-educated men from the Town Council. The sanitary law could never be left in the hands of honorary members of public boards. The people must be educated before the law could be efficiently carried out. In conclusion, the lecturer sketched out a sanitary system which he thought would work satisfactorily. There should be district officers of health, subject to the control of the central authority, and entirely independent of local interests. In this matter he thought the Government should be called upon to lend their aid."

NOTES FROM THE SOUTH.

Extensive alterations and improvements have for some time past been in progress on the estate of Lord De Vesci, at Monkstown, including very considerable additions to Monkstown Castle. Messrs. Henry and Arthur Hill, architects; Mr. Samuel Thomas, of Cork, contractor.

The same architects and builder are now engaged in carrying out the works of improvement to the Cork Savings Bank buildings, and secretary's residence in connection therewith, embracing a new front to the latter, facing Warren's place.

Very extensive additions are about being made to the Cork District Lunatic Asylum, from the design of the governors' architect, Mr. William Atkins, F.R.I.A.I., comprising amongst other works a new wing to the infirmary, laundries, stores, airing-sheds and yards. Mr. Robert Walker, jun., has been declared the contractor, for £5,800.

The People's Refreshment Rooms, Lavitts-quay, are being re-modelled and re-fitted by Mr. Samuel Hill, under Messrs. Henry and Arthur Hill, architects.

A marine residence for Wm. Shaw, Esq., M.P., is being erected at Coolmain, near Kilbrittan, County Cork, by Mr. James Hunter, builder, of Bandon, from the design and under the superintendence of Mr. N. Jackson, C.E. and architect.

Considerable works are being carried out on the estate of Sir Augustus Warren, Bart., at Warrencourt, embracing new farm offices and extensive alterations and repairs to existing buildings. Amount about £1,100. Mr. Henry Stokes, C.E., architect; Mr. Barry M'Mullen, of Cork, builder.

Mr. William H. Hill is at present laying out the works of a complete farming establishment at Ballinrea, including residence. Amount under £1,000.

ON THE IMPROVEMENT OF TIDAL RIVERS.

A very instructive and interesting paper was read at the beginning of the month, at the Institution of Civil Engineers, by Mr. James Deas, M. Inst. C.E. The subject was "The River Clyde," in which was given an account of the various works carried out for improving it as a navigable river, and the modes and cost of dredging and depositing followed, in its deepening and widening, for several years. It may be truthfully stated that it was to the engineering works carried out on the Clyde that Glasgow owes its rapid rise from a rather insignificant town towards the close of the last century, with a population of 35,000, to a population at present of 566,150, including her suburbs. In connection with the improvement of the Clyde, the mineral resources of the district were developed and continued, the subsequent railway system of course giving a

greater impetus to every industry in Scotland. Concerning the attempts made in the past, and the works going on at present to improve the port and harbour of Dublin, it is not our intention at present to descant. All we will say is that the Liffey, though it has been greatly improved of late years, it is still susceptible of improvement. From the concluding portion of Mr. Deas' paper, which we give, it will be seen how the improvement of the Clyde was carried on through a succession of years. The information cannot fail in being useful to many engaged in similar works:—

"A variety of appliances have been employed in the deepening and widening of the Clyde. The sand banks, when dry at low water, were broken up by common land ploughs, drawn by horses, so that the current might carry the sand away. Another description of plough, much used, consisted of a front plate of iron and two sides of timber; the front plate being armed with prongs when gravel banks had to be operated upon. These ploughs were fitted with sling chains at each end, were wrought in pairs by hand capstans, two of which were placed on the river bank, and two on a punt moored in the river on the opposite side of the bank to be removed, and were hauled through the sand bank with their loads, which were removed at low water on to the adjoining land. Harrowing even was had recourse to, a harrow being attached by tackle to the stern of a tug steamer, which set off with the tide, tearing up the bottom as far as requisite; the harrow was then raised, the vessel steamed back against the tide, and the operation was repeated. Dredgers, with small buckets on a ladder, wrought by hand and by horses, succeeded the ploughs and harrows, and in 1824 the first steam-dredger was started. It dredged only to a depth of 10½ feet; whereas now, several of the dredgers could work in a depth of nearly 30 ft. of water. The cost of dredging varied much, according to the character of the material to be lifted, to the power of the dredger, and to the capacity of the buckets. As the material dredged from the Clyde varied from silt and sewage deposit to the hardest gravel and boulders, completely concreted together, it was evident there must be a corresponding range in the cost per cubic yard of dredging. As an example of good work, it was stated that one of the two most powerful of the trustees' dredgers lifted on each of five consecutive days, in the month of August, 1872, 2,240 cubic yards of material, or about 2,800 tons; the engine working 9 hours the first day, 9½ hours the second, third, and fifth days, and 9¼ hours on the fourth day; the average strokes of the engine were 33 per minute, the average depth of water the points of the buckets were working at, 20 feet. Dredging was carried on in the Clyde all through the year, 2,400 hours average working time being performed by each dredger per annum. Repairs formed a heavy item in the working expenses of a dredger. An hour each day on the average was consumed in replacing pins, links, and buckets, and nearly every year each dredger was laid up for several weeks undergoing a thorough overhaul.

Occasionally the deposit was removed sufficiently far from the front of the quays to enable the bucket dredgers to work by spooning. The spoon was a large pronged spade with a straight handle, about 50 ft. long. The spoons were wrought in pairs by hand crab winches, two on the quay and two on a punt moored in the river. One man held the handle of each at the edge of the quay, and one set of three men on the quay, and another set of three on the punt worked in spoons alternately, from the face outwards and back again for a fresh spoonful.

Boulders, weighing as much as 17½ cwt., were occasionally lifted by the dredgers, but diving bells were constantly employed lifting boulders, some of which weighed upwards of 6 tons. The most important work, however, performed by the diving bells during the last twenty years had been the removal of a bed or dyke of trap rock about 4 miles below Glasgow. This rock was accidentally discovered in 1852 by one of the first line of steamers started between Glasgow and New York grounding on it. The rock extended over the bed of the river for about 900 ft. in length, by about 300 ft. in breadth. Blasting by gunpowder, fired by an electric battery, had, at a cost of upwards of £16,000, removed the rock over half the channel, so as to give a depth of 14 ft. at low water, the other half having an available depth of 8 ft. at low water.

Up till the year 1862 the whole of the dredged material was deposited on land at a cost in 1861 of 10-37 pence per cubic yard for depositing alone, exclusive of interest on cost of, or allowance for depreciation, of plant. Many acres of alluvium thus reclaimed became the property of the riparian pro-

prietors who now asked from £1,200 to £1,400 per acre for it. In 1860 the Trustees introduced steam hopper-barges for the purpose of conveying the material to sea. The result of working for the year ending the 30th of June, 1871, was that the cost of conveying 673,240 cubic yards to, and depositing them in Loch Long, 27 miles from Glasgow, was £15,323 8s. 2d., or 5-46 pence per cubic yard, 1-84 penny of the said rate being 10 per cent. on the value of the barges for interest and depreciation; while for 122,664 cubic yards deposited on land the cost was 16-40 pence per cubic yard, 3-52 pence per cubic yard being 10 per cent. on the value of the punts for interest and depreciation. In the twelve months referred to 904,104 cubic yards, or about 1,130,000 tons, were dredged from the harbour and river, of which 689,500 cubic yards were carried to sea, and 214,544 cubic yards were deposited on land. Of that quantity 345,209 cubic yards were considered deposit, and 558,895 cubic yards new material. During the last twenty-eight years 14,600,000 cubic yards, or upwards of 18,250,000 tons, had been dredged from the river by the Clyde Trustees.

The Trustees' dredging plant consisted of six steam-dredges, fourteen steam hopper-barges, one steam-tug, three diving bells, two hundred and seventy punts and numerous small boats, one dredger and four hopper-barges having been added in the summer of 1871. The value of the plant was £140,000. In 1867 the Trustees, at a cost of £25,000, erected at Dalmuir, 8 miles below Glasgow, works for the repair of their plant, including a patent slip to accommodate their largest dredger. One hundred and forty hands were constantly employed.

From Glasgow to below the mouth of the River Cart, on the north side, and to near Erskine Ferry, on the south side, the river dykes had all been removed, and for that length the river flowed through land now above the level of high water, much of which had been raised to that level by material dredged from the river. The slopes of the banks were 1½ horizontal to 1 vertical, and were covered with whinstone rubble. Until within the last four years when the Author became the engineer of the navigation, the stones were hand pitched, at a cost for labour alone of 1s. 2d. per square yard; since then pitching had been discontinued, and the stones left rough as laid on. The slopes stood better, and the waves raised by steamers were more effectually broken. A coating of stones 12 inches in average thickness effectually protected the slopes for months.

The total expenditure of the Trustees since 1770 had been £5,594,981 14s. 8d.; of which a sum of £1,390,947 18s. was for interest on borrowed money, £724,453 8s. 3d. for land for the enlargement of the harbour, and £104,838 for land for widening the river below the harbour. The whole expenditure had been paid out of the rates and by money borrowed on the security of these. The total debt of the trust at the 30th June, 1872, amounted to £2,151,557 8s. 3d."

REMARKABLE ASSYRIAN DISCOVERIES.

THE first fruits of the "Daily Telegraph Expedition" is detailed in a communication from Mr. George Smith, published yesterday in the journal in question. Among the more important finds is a memorial tablet about 3 ft. high 1 ft. 9 in. wide and 1 ft. 2 in. thick. The obverse of this monolith presents a number of curious mythological figures, including emblems of the gods and demons, with a remarkable representation of a tower in stages, recalling the Birs Nimroud. The back has three columns of inscription, including 115 lines of writing, and contains a royal charter or grant of land from the King of Babylonia to a priest holding several offices. The priest engages to perform certain religious ceremonies in return for the grant. This tablet is the most valuable of its class that has ever yet been discovered, and bears upon it the names of three Kings of Babylonia, two of whom are quite new to history. The stone was originally found near the Tigris, and not far from the city of Baghdad, serving thus to mark the approximate position of two of the Babylonian cities of which the writing makes mention; but it is worthy of notice that while the inscription states that the land was situated on the east of the Tigris, the owner declared to be that the stone was found on the west of the river.

The second inscription of interest was

purchased by Mr. Smith from the French Consul at Mosul. It is a stone tablet about 20 in. long and 9 in. broad inscribed on front and back, and containing eighty lines of cuneiform writing. The stone was discovered at Kala Sherghat, the site of the ancient city of Assur. This text is of about the same age as the monolith already described, and in some technical particulars resembles the inscription of Hammurabi in the Louvre.

The rest of the inscriptions acquired are borne on clay tablets or fragments of tablets and fragments of cylinders, and they come chiefly from Babylon, having been gleaned during a brief survey of the southern field. First, seven fragments, three of which fit together, making the remains in all of five tablets belonging to a set from the Babylonian library. They appear to be tablets of the Sumir, an ancient Turanian race inhabiting Babylonia, and they contain legends of the country's early history. They are for the most part written in Turanian, and accompanied by an interlinear rendering in Semitic; but the Semitic version is in many places rather a loose paraphrase than an exact translation. The record on these tablets is probably of the same class as the well-known legend of the Flood. Some of the fragments belong to the twenty-second and twenty-third tablets in the series.

The principal contents of a second series of pieces are the prayers of an ancient Babylonian monarch named Amil-urgal, who invokes Bel or Merodak and Lirat-banit, the gods of Babylon. Some of the expressions in the prayers are very striking. In one Amil-urgal says, "O Bel, thy seats are Babylon and Borsippa, thy crown is the wide heaven." The purport of his invocations is to ask a blessing on Babylon, its temples, its king, and its people.

Another fragment is of a bilingual tablet containing a number of short sentences something like the proverbs of Solomon, but they do not display so much wisdom as those of the Hebrew King. One of them will serve as a specimen of sententiousness: "Whoever with others traffics, with others to the unseen place may they cause him to enter."

Another fragment is part of a Babylonian syllabary similar to those tablets which the Assyrians copied, and which have been so valuable to cuneiform students.

Several other fragments and tablets have also been discovered by Mr. Smith, the particulars of which he has not had time to write out a detailed description. These discoveries are on the whole remarkable and must create a great interest among the learned, and on the part of biblical archaeologists in particular.

BOOKS RECEIVED.

Record of Draught of Water of Sea-going Ships leaving Ports in the United Kingdom, reported to the Board of Trade, May, 1872, to February, 1873, inclusive.

THIS is a 4to of about 160 pages of tables, printed for Mr. Samuel Plimsoll, M.P., a gentleman who is making great exertions to have a short act passed in the present session of Parliament, "to prohibit deck-loading, to prevent ships that need repair from going to sea before they are repaired, and also that a maximum load-line be adopted, to prevent overloading. The annual loss of 3,000 lives on our coasts is surely a matter of regret. We hope, now that the "Occasional Sermons Bill" (whatever that means) is disposed of, a topic of such great importance as the preservation of life at sea will receive the attention of the House.

The Popular Recreator. Parts I. and II. Cassell, Petter, and Galpin.

WE have again to thank the publishers for this, the latest addition to works likely to aid in the diffusion of useful knowledge. On looking over the parts before us, we were amazed at the variety of subjects treated of.

We need not recount their titles. The engravings and diagrams given clearly explain the information sought to be conveyed.

The Relative Advantages of the 5 ft. 6 in. Gauge and of the Metre Gauge for the State Railways of India, &c. By Wm. Thomas Thornton, Secretary of the Public Works Department, India Office. London: Printed by Clowes and Sons.

THE above is the title of a paper read before the Institution of Civil Engineers, London, on the 4th of February last. The subject is a most important one for railway engineers, in this country as well as in the Indian Empire. In the discussion which followed the reading of Mr. Thornton's paper, we find that over forty of the leading men in the profession expressed their opinions *pro* and *con*. We may hereafter refer to the subject.

THE NATIONAL MANUSCRIPTS OF IRELAND.

THE annual report of the Deputy-Keeper of the Records, which has just been published, contains a very interesting sub-report from Mr. Sanders on the advance made last year at the Ordnance Survey Office, Southampton, in photozincographing the national manuscripts of Ireland. The intention is to print these volumes of fac-similes uniformly with those of Scotland; the first to range from the earliest period to the Anglo-Norman invasion in 1170; the second to come down from that date to end of the reign of Henry VII.; and the third to continue the series to the accession of the House of Hanover. Of course it will take a considerable time to carry out this intention, but last year the officers of the Survey made good progress with the first volume. The earliest manuscript of the series is the famous "Domhnach Airgid," or "Silver Shrine," which, Mr. Sanders tells us, is perhaps the oldest copy of the Gospels in the world. It is traditionally believed to have been the private book of devotion of St. Patrick himself, and to have been given to him by St. Carthainn, when he consecrated the latter saint Bishop of Clogher. The manuscript is undoubtedly of the fifth century, and is, unfortunately, so injured by age and damp as to make inspection of its contents impossible, the leaves being all stuck together, and the whole of about the consistency and appearance of a piece of brick. The next manuscript is not less curious than the preceding. It is known as "Cathach," or "The Book of Battles," a name it is said to have obtained on account of the desperate strife to which it gave rise. The legend is that St. Columba, being on a visit to St. Finnen, gratified his insatiable passion for manuscript collecting by furtively copying in the church his host's famous collection of psalms. The host was informed of this, but said nothing till the copy was completed, when he called upon St. Columba to deliver it up to him. St. Columba refused, and the matter was referred for decision to the principal King of Ireland, who decided against the copyist, on the principle, "to every cow its calf." As it happened, St. Columba received other causes of offence from the monarch at the same time, whereupon he stirred up his kinsman of Tirconnell to avenge the wrong done him. The result was a civil war, in which the king was slain. "The Book of Battles" was preserved for 1,300 years by the O'Donnells of Tirconnell, the saint's clan. The two next manuscripts—"The Book of Durrow," and "The Book of Kells"—are also attributed to the same saint. Of "The Book of Kells," Mr. Sanders speaks as follows:—"It is impossible to exaggerate the elaborate ornamentation of this remarkable volume, or the quaintness of the grotesque subjects introduced into it. The gigantic initial letter, which is given as an example in this volume, is filled in with an almost incredible interlacing of extravagant impossibilities: serpentine figures with human heads; inter-twined sketches of men spotted like leopards

in attitude of earnest conversation; rats sitting on the backs of cats, who are holding other rats by the tails, the rats being engaged in eating a cake; human figures with impossible combinations of their own and other creatures' limbs; strange shapes of birds and fishes; geometrical designs and intricate arabesque traceries, all woven together in the wildest, dream-like way, and having an effect that charms the eye and fills the mind with amazement at the fancy that designed, and the hand that executed them." In addition to these four manuscripts, there is an immense mass of others scarcely inferior to them in antiquity, and quite equal in artistic and historical interest, fac-similes from which it is intended to give in the volume now in preparation at Southampton. These manuscripts are of all kinds—religious, historical, poetical, and fictional—and are full of illustrations of the customs, manners, mode of life, and costume of the inhabitants of ancient Ireland.—*Express*.

THE ROYAL IRISH ACADEMY.

A GENERAL meeting of the Royal Irish Academy was held at 19 Dawson-street, on Monday evening.

Rev. Professor JELLETT occupied the chair.

Professor Sullivan read a paper (by himself and Professor O'Reilly) "On the Influence of Dolomite on the deposition of carbonates and silicates of zinc, especially as illustrated by the zinc deposits at Silvermines, in the county of Tipperary."

Mr. W. H. Patterson exhibited a series of drawings of monumental slabs in the County Donegal, which he described. He also mentioned the localities where they are situated.

The Hon. Chichester Fortescue was elected as a member.

The hon. sec. announced the receipt from the Royal University of Norway of the medal issued in commemoration of the millenary jubilee celebrated on the 18th July, 1872.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

At the meeting of this institute held on the 17th ult., the following resolution was passed:—

"That this Institute having taken into consideration the important bearing of the proposed Judicature Bill of the Lord Chancellor on professional practice, suggested to its notice by the Birmingham Architectural Society, and by report of recent proceedings at the Architectural Association of London, desires to second warmly any efforts which may be made by the Royal Institute of British Architects to further the establishment of such tribunals as proposed—viz, equity courts presided over by members of the Architectural profession; and that this Institute desires that the provisions of such a Bill should be extended to Ireland, where the administration of justice in professional questions has been especially unsatisfactory."

JOTTINGS.

The new graving dock at Limerick was inaugurated on Tuesday last, by his Excellency the Lord Lieutenant. It has been formed out of solid limestone rock, and is 450 ft. in length, by about 60 ft. in breadth. An address from the Harbour Board was read by Mr. James Spaight, President of the Chamber of Commerce, to which Earl Spencer gave a lengthened reply.

The Dublin Industrial Exhibition was yesterday re-opened for the season. There was no formal ceremonial observed on the occasion; and, with the exception of a well-arranged musical entertainment, there was little to attract the attendance of the general body of sightseers. "As to the exhibition itself," says a morning contemporary, "in

many respects it does not materially differ from the exhibition of last year; in many respects it is inferior, in some there is an improvement. The number of exhibitors of manufactures are apparently very few, and the absence of the accustomed well-furnished stands gives an air of nakedness here and there to the building." An organ (by Brown, of this city) has been erected in the glass building, and the performances on it by Mr. W. H. Gater, combined with the other musical attractions promised by the committee, will, it is hoped, draw thousands of promenaders to the Industrial Palace.

The Dublin Tramways Company have decided not to run a tram line through North Earl-street. The line to Clontarf will be ready for traffic early in the next month.

The deaths registered in the Dublin Registration District during the week ending the 10th inst. represent an annual mortality of 25 in every 1,000 of the population, by the Census of 1871. In London the death rate was 21 in every 1,000 of the estimated population, in Glasgow 32, and in Edinburgh 23.

A contemporary announces as ready for publication in a few days, the new series of *MS. Materials of Ancient Irish History*, by the late Eugene O'Curry, M.R.I.A. The first volume of the new edition of Archdall's "*Monasticon Hibernicum*" will be issued shortly.

Professor Bottger some twenty years since proposed that films of iron should be deposited by electricity upon engraved copperplates for the purpose of preserving them from wear in printing. He now proposes that the deposit should be made from the ammonia-sulphate of iron, which, he says, gives admirable results, the iron films being of great hardness.

FINE ARTS—UNDER THE HAMMER.

On last Saturday, at the salerooms of Messrs. Christie, Manson, and Woods, a choice collection of ancient and modern pictures passed under the hammer. The collection belonged to the late Thomas Howard, of Blackheath. There were some very fine works of the well-known artists, Gainsborough, Morland, Patrick Nasmyth, Old Crome, and other eminent painters. The principal pictures realised extraordinary high prices. The sale produced upwards of £20,000. The annexed list were the leading pictures, among which will be seen one by Gainsborough, which was sold at 6,300 guineas:—

W. Muller, 1839—"Evening," an upright river scene; with a smith's forge, two children in the foreground, and two cows at a stream on the left. Size 32 in. by 26. 330 guineas.

D. Teniers—"The Bowl-Players," a view in a village, with a party of nine peasants engaged in the game of bowls, a shepherd tending sheep, and a church among trees in the background, a rainbow in the partially-clouded sky. Signed. 16 in. by 22. And "Le Cuisinier Flamand," by the same master; also signed. 24 in. by 19. Engraved. From the collection of the late Captain Marryat, R.N. 570 guineas.

Jacob Ruysdael—"A Landscape, a river falling in a cascade among rocks, with a rustic cottage on a wooded height, a tree overhanging the stream beneath, and peasants with sheep in the background. 27 in. by 22. 315 guineas.

A. Cuyp—"A Sunny Landscape, with two cows standing and two lying down under a group of trees, with hilly distances. 17½ in. by 14. See Smith's "*Catalogue Raisonné*," No. 202. 520 guineas.

G. Morland—Three fine examples from the collection of the late Jesse Curling, viz., "The Horse Fair," 30 in. by 36; "Driving a Hard Bargain," 19 in. by 25; and a Group of a Ram and Two Sheep under an oak tree, 11 in. by 14. Exhibited at the International Exhibition, 1862. Sold in one lot. 650 guineas. (Williams.)

T. Gainsborough, R.A.—Portraits of Two Young Ladies, Sisters. Painted in 1775, and exhibited the same year at the Royal Academy. Size 48 in. by 39. 6,300 guineas. (Messrs. Agnew.)

G. Morland—"The Fruits of Early Industry and Economy," 29 in. by 25. Engraved. 610 guineas.

Patrick Nasmyth, 1827—"Firth of Forth, Crumond, near Edinburgh," 17 in. by 23. From the Gillott collection. 870 guineas.

T. Gainsborough, R.A.—Portrait of Miss Evans, sister of Lady Willoughby, 49 in. by 39. 750 guineas. J. Crome, sen.—"A Windmill on Mousehold Heath, near Norwich," 44½ in. by 35½. From the Gillott collection. 260 guineas.

Raffaello del Garbo—"The Madonna and Child, with Angels," 31½ in. by 82. 950 guineas.

Albert Cuyp—"A Landscape, with a boy holding a horse, which the rider has dismounted, a cavalier approaching. The scene represents an open country, with hills. An admirable production of the choicest quality. 22 in. by 28. See Smith's "*Catalogue Raisonné*," Part V., p. 345. 1,150 guineas. (Thompson.)

G. Morland—"The Fisherman's Hut." Engraved. 24½ in. by 30. 330 guineas.

T. Gainsborough, R.A.—A Grand Landscape, with the death of the Fox, 70½ in. by 93½. From the collection of the late Duke of Northumberland. 720 guineas. (Durlacher.)

HOME AND FOREIGN NOTES.

ADULTERATION CASE.—On Saturday J. Toole was summoned before the petty sessions court by the Abbeyleix Board of Guardians for having sold to them adulterated milk. Dr. Cameron proved that the milk was adulterated with 25 per cent of water. The magistrates sentenced the defendant to pay a fine of £10 and £10 costs, and ordered his name, address, and offence to be published in two local papers, he having been convicted before of a similar offence.

NEW ZEALAND.—In a letter written by a spinster to her friends in England, soon after her arrival at Christchurch, New Zealand, we find the following:—"I must tell you that the mountains here are something grand—burning volcanoes—you can see the ashes that were all alight on them some years ago. I went up to the top of one last Sunday morning, and saw the sun rise, and I never saw a more beautiful sight in my life. They were visible from the ship fourteen days before we landed, and when we ran into harbour there was chain after chain of green high-peaked mountains all round us for miles; it is a grand sight, and I should so much like for you all to have seen it. The town I am living in lies at the foot of some of them, so if another earthquake occurs I dare say we shall all be swallowed up. There has not been one for two years; that is the reason all the houses are built of wood, because earthquakes shake all brick buildings down. I wish I could describe everything, but that would be impossible. Tell Eliza I made friends with Mr. and Mrs. G—, and they are doing well; he got engaged as a carpenter before he left the ship; and now I must tell you that a young man by the name of —, a carpenter and cabinet-maker from Brighton, made love to me all through the voyage, and we are going to be married on Christmas Day. He is very respectable and steady, and brought out a few pounds with him, and he has bought a couple of acres of land, and begun to build our own cottage of four rooms, and as he can make nearly all our furniture, it will be ready by Christmas, and I shall stay here until I am married, when I shall have ten pound to take—some difference in the wages here and in England. He is tall and stout, 22 years of age, and an excellent tradesman, and is getting his 12s. a day; his trade is the best one going out here, as everything is built of wood. Mr. — can tell you a little about him, for I first saw him in his office. Married men do better out here than single men, as they charge so much for lodgings, although they can soon run up a wooden house of their own. We can live here on 10s. a-week, and have no rent to pay, and can pick up all the wood for firing, so that any one could be very comfortable. There are no workhouses here—nobody needs one—all are living comfortably; a beggar has never been seen. There are no dirty streets, nor no rag and bone shops, but everything green and bright, with lovely little houses few and far between. The town I am living in is considered very large and grand; it is four miles square, and boasts of four public houses, three wooden hotels, and about fifty large shops. All the houses are on one floor—no stairs; they would just suit mother, I know."

TO CORRESPONDENTS.

PETER NICHOLSON.—The author named produced a work on cabinetmaking as well as on carpentry and joinery. He was a native of Carlisle, we believe, and was originally an operative of the former trade.

ARCHDALL'S "MONASTICON."—A new edition of this very useful but not altogether accurate work is announced. It would be advisable that its editor would hunt up the materials left by Archdall at his death, some of which are at present in the British Museum. It may not be generally known that its author intended to bring out a much larger work, but for want of means was obliged to publish a greatly abridged one.

NEW PROBLEMS IN CARPENTRY.—We will gladly illustrate any diagrams of merit developing new and useful methods of construction sent on the part of operatives in the building trade. We must, however, be allowed to decide whether their merit entitles them to be placed before the public, or whether they possess any advantages over methods at present in use.

A STONEMASON.—Take a look at the stone steps and surrounding balustrade in front of Powerscourt House, Williams-street. Raking mouldings and handrailing in stone were understood by the old Dublin masons as well as that in wood by their brother "chips."

THE O'CONNELL STATUE.—We dare say it will be finished "next year or the year after." If the Corporation wish to honour the memory of the Great Tribune, they might celebrate his centenary and erect his statue in the same year. The year 1875 will be the exact centenary of O'Connell's birth.

A BUILDER.—If the owner can prove you unnecessarily delayed the prosecution of the work, and previously remonstrated with you on such delay, the law will, we think, sustain him for the action he has taken in putting on hands of his own to carry on the job. The extra work, if not mentioned in the contract, is not governed by it, and you are entitled to recover.

CANDIDATES FOR "SWIFT'S."—Although the witty Dean of St. Patrick's, in founding an hospital for lunatics, "Shewed by one satiric touch,"

No nation needed it so much," still unfortunately the worst lunatics are left out in the cold, and even their own friends will not volunteer to take care of them. It would be a pity to see the City Hall converted into a permanent Bedlam for the use of its occupants, but it is a deplorable fact that that once respectable building is fastly becoming an hospital of incurables.

B. W.—The subscription is 8s. a year. You can send stamps for the amount.

LAMPLIGHTER.—See our remarks on the Gas Bill in present issue.

H. B.—You must furnish some clearer statement before we can satisfactorily answer you.

Some articles on technical and trade subjects, and on exhibitions and other matters, are held over.

A SIMON PURE ON QUACKS.

Look on this MORALITY, And on this BUSINESS. ENCOURAGED, we suppose, by the impunity they have enjoyed, wretched vendors of quack medicines now thrust their debasing and nauseous publications under doors and into the letter-boxes of private houses. We cannot describe the scandalous nature of some of these publications. It is a wonder to us how the miserable agents who circulate them escape the wrath of fathers and brothers. Surely these persons are not more worthy of toleration than wenchers.—*Irish Times*, May 8th.

MEDICAL ADVICE FREE.—S. A. Levenston, Accoucher, &c., may be consulted upon cases of Nervous Debility, &c. Consultation and medicine, 5s.; attendance in accoucher cases, 10s. 6d. Please observe the address—42 Kildare-street, Dublin. **NOTICE TO INVALIDS.**—Dr. Mulvany, Consulting Physician and Accoucher, 4 Christ Church-place, Dublin, may be consulted free, by personally or by letter, on all cases of Nervousness, Debility, and Female Complaints, &c. Dr. M.'s Medical Directory for Invalids on all Diseases sent free on receipt of stamped directed envelope.—*Irish Times*, May 8th.

"A VISIT TO EPPE'S COCOA MANUFACTORY."—Through the kindness of Messrs. Eppe, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Eppe, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or Milk. Each packet is labelled—"JAMES EPPE & CO., Homoeopathic Chemists, London." Also, makers of Eppe's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Eppe and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbot-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

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The Irish Builder.

VOL. XIV.—No. 323.

Irish Watering-Places and Guides.



WE are always pleased when we see an honest and creditable effort made by any member of the publishing fraternity—no matter from what part of the three kingdoms he may hail—to place before the public the picturesque scenery of this country. All such attempts should be encouraged, when worthily done, for they induce strangers to come amongst our people, to view them and their surroundings as they exist. Such contact is a benefit to those who come, and a benefit to those who receive. The watering-places of England and Scotland and the Continent of Europe have nearly been exhausted by repeated description, sketching, and photographing. Ireland, with the exception of some remarkable places, is still an unworked field. Hundreds of beautiful spots exist almost unfrequented, untrod by sportsman, angler, or tourist. Many of these districts, notwithstanding their beauty, offer but little inducement to the ordinary race of Cockney travellers or guide-book compilers. Whomsoever he be who first unfolds the charms of these neglected nooks, we may be certain it will not be the third-rate artists of pen and pencil who have for some seasons back been flooding the country with their trashy, fulsome, and hotch-potch guide-books done to order. From twenty-five to forty years ago the writers of strangers' and tourists' guides knew their work, and, having the requisite ability, accomplished their task with credit to themselves, their publishers, and the public. The men who compiled some of our first admirable works in this line were scholars and gentlemen, archaeologists and antiquarians. Everything they touched upon and described was invested with a charm. Their delineations were true to nature and to art in antiquities, scenery, customs, habits, pastimes, and manners. If an old abbey, castle, or round tower was met, it was sketched with fidelity, and its age, history, and architectural character were given with accuracy.

Alas, we are "fallen upon gloomy days," as our national bard has written. Many of our latter-day guides guide nowhere right, but misguide everywhere. They are got up for a purpose. Type and illustrations are prostituted not to display what is really of service to the general public, but what ministers to the vanity and ignorant pride and self-sufficiency of local entities, whose claims to be known would seem to rest upon the number of cows or pigs they rear for the market, the number of sheep they raise, and the amount of butter, bacon, or hardware or software goods they sell in the year.

So much by way of introduction. The guide-book under notice* is one of a number called "Shaw's Shilling Series," and if all the rest are equal in usefulness to the present one, the compilers and publishers had better

take care of their laurels,—that is, if they have during their career obtained any. The book under notice, from title-page to finish, is absolutely choking with errors—errors gross, errors ignorant, errors mischievous. It has served and will probably serve a section of the public, for whom it has been compiled. Those advertisers whose names are not on the wrapper or fly-sheets are attended to in the text, and soft solder and soft soap have not been spared to show off the worth of their gimerack establishments in the respective watering-places attempted to be described. On looking through the book at first sight we were perfectly astounded at the assurance manifested in its compilation, and we marked the errors as we went along, determined to reproduce them for the edification of the publishers and of the public. They were so numerous, however, we could not spare our valuable space in giving them. We are quite ready, at the same time, to hand over the marked copy to any public committee of Irish gentlemen for examination, for their verdict; or if any would-be tourist passing through Dublin, who has not yet visited Carlingford Bay, wishes to call at our office, he can have a look at our "marked copy."

The work presumes to be revised up to the month of May of this year, yet the Dundalk and Greenore harbour and railway works completed before that date are spoken of as intended works. We are told "the railway from Dundalk, Hotel, and Docks, are fast hastening to completion." In respect to Newry, we are told the lord of the manor, by virtue of his patent, is entitled to certain privileges, though everyone in the town knows that the tithes spoken of are long since abolished. After floundering through a portion of the early history of Newry, in which there are several mistakes, the compiler tells a truth in the following fashion—"To relieve the dull tedium of our narrative we beg to present the following extracts relating to Newry, from that most piquant history, 'Mitchel's Life of Hugh O'Neill', a work which has all the interest of a splendid romance." The compiler is quite at home in his description of the hotels, and their proprietors: each comes in for unqualified praise. In the matter of distances, equal accuracy is shewn as in the other matters. The tourist is of course supposed to go by rail when leaving Dublin, so we learn for the first time that "Newry is fifty miles north of Dublin, thirty south-west of Belfast, and fifteen south-east of Armagh." Now the first is really 76½ English miles by rail, and the other distances are 45 and 21 respectively in relation to the places mentioned, instead of what this accurate guide-book gives.

Speaking of St. Patrick's Church, the compiler is oblivious that any change has overtaken the Irish Church. He says, "The chaplaincy is a benefice in the gift of the Earl of Kilmorey. The chaplain holds his situation on the same conditions as a rector or vicar in any diocese; is a body corporate in himself; and, as such, has a vote at the election of representatives for the County Down."

Speaking of St. Mary's Church, we have this little bit of valuable and important information introduced in the text:—"The window was supplied by John Moore, Esq., Newry, agent for the St. Helen's Glass Company, Lancashire." St. Patrick's Catholic Cathedral is put down "among the finest public buildings

in Ireland." Well, there are worse, we know, but we cannot go so far as to say it is among the finest. Except in the extracts from the writings of others concerning the history and institutions of Newry, the other interlarded matter is nearly useless. What do strangers and tourists want to know about the names of petty shopkeepers and their wares, in this street and that? The text is everywhere interlarded with direct puffs. The substance of a large part of the work is furnished up from other guide-books, reproducing all their errors, and adding nothing new of importance. Descriptions of Carlingford, Newry, Rostrevor, and other spots, which might be tolerable in a work published on these places thirty years ago, are introduced to answer for the present sights. A work published by Vizetelly Brothers, London, in 1846, is laid under tribute to afford a "further" description of Newry and vicinity. In describing the minerals and manufactures of the district there are some ludicrous mistakes made, showing that the compiler was at sea in stitching together his patch-work quilt.

We are given descriptions of Castlewellsan, Dundrum, Rathfriland, and Newcastle, in which there are not a few errors, which we cannot stop to particularise. Of Newcastle we have a tinted illustration, which deserves a leather medal for its wonderful clearness and beauty. There are other tinted views in the book like this—some better and some worse. We thought the graphotype process had by this time made some advance; but if these views be the *ne plus ultra* of the new art, the cliffs of Dover will not suffer much through the consumption of chalk. As "distance lends enchantment to the view," perhaps these graphic illustrations will be appreciated by the mirage-like effect of their vanishing points.

The attractions of Newcastle are described by our guide by an extract from the *Downpatrick Recorder* of a notice published thirty years ago. "Tollymore" Park is "Tullamore" on the plate, though correct in the text. The Kilmorey Arms Hotel, in Kilkeel, it is said, "has all the attributes of an excellent English country inn; and what higher praise can be bestowed upon it?" The "gudgeon bobbbers of Putney" and "kidnappers of minnows at Twickenham" are reminded of the delightful retreat within a day's journey of St. Paul's, within the secluded quarters of the Kilmorey Arms. Mine hostess must be awfully proud of the Cockney compiler of the Guide to Carlingford Bay. He is well up in the shallows of the river of dead dogs from Wapping to Richmond, and has, no doubt, often enjoyed the benefit of a half holiday "blow" on the river in the penny Chelsea boats. The description of Kilkeel is reproduced from an old guide, which has been usefully availed of for the present.

Greencastle, Rostrevor, Kilbroney, Warrenpoint, Narrow Water, Green Island, and other minor places, are noticed by our guide-book compiler more with a view of praising the shoddy personages out and about the district, than to afford any new information of a useful kind.

Taking the chief towns—Dundalk, Carlingford, and Newry—there was plenty of matter of interest to hand, and every facility existed for correcting such information up to the present season. Yet this guide-book is issued to the public full of mistakes, and, where correct, most incomplete and useless as a reference to strangers. A guide-book it

* "The Tourists' Picturesque Guide to Carlingford Bay, Newry, Warrenpoint, Rostrevor, Newcastle, &c." London: The Graphotyping Company, Limited; Simpkin and Marshall. Dublin: Smith and Son. Newry: Warnock and Co.

is not, except in name. It is a local puffing directory, compiled to sell, and is certain to sell many. Even in the matter of fares, tourist arrangements, distances, and other knowledge necessary to the tourist or traveller, the book affords no information; but the reader is referred to Bradshaw's Guide. One would suppose there was no such thing published in Ireland as a railway guide to be relied upon, or that Falconer's Guide was unknown in this country.

If English publishers wish to serve this country, and eventually to serve themselves, let them begin by telling the truth and turning out works which will be a credit to all hands engaged. There are some houses in London which have issued good guide-books to watering-places in Great Britain and abroad. They have spared no expense in obtaining correct information, and their works are a success, because they can be relied upon. The Guide to Carlingford Bay, &c., notwithstanding its green wrapper, is a mistake, a mis-guide, and a calamity that will not bear a repetition in this country.

MEMORIALS OF OLD ESSEX BRIDGE.

[Being Extracts, with Notes, from the Diary of George Semple, Architect.]

THE name of George Semple has been many times alluded to by more than one writer in the pages of the IRISH BUILDER. As the architect of the Essex Bridge now about to be replaced, except in its foundations, some account of his works must possess an interest for our citizen readers. We therefore purpose to avail ourselves of the information conveyed in a work published by him near the close of his career in this city (1776), entitled "Building in Water," with which is included his Diary of the Rebuilding of Essex Bridge. The work is a somewhat scarce and curious one, and the extracts we will give will serve as an index to the architect's character, capacity, and the state of architectural and engineering practice in this country in his day—say one hundred years ago. Some of his remarks, viewed in the light of the present hour, will naturally create a smile, perhaps; but his work, taken as a whole, shews him to be a man of wonderful perseverance and industry, and possessed of a large amount of self-reliance and keen judgment.

In the summer of 1751 Semple was induced to undertake the temporary repair of Essex Bridge, at the suggestion of the then well-known Mr. Prior, whom the architect accidentally met at the house of the Lord Archbishop of Dublin. The public had been deprived of the use of the bridge for about four months by the giving way of one of the piers. Three plans or schemes were lying before the Corporation: one was to repair it with timber in five months, for £500; another with stone, for £800. Semple being asked to express his opinion, stated that he believed the repair could be accomplished in ten days, at the cost of 100 guineas. He undertook the task, and completed the temporary repair, satisfactorily, within the sum named.

The bridge that preceded the one that Semple commenced to re-build was commenced in 1676 by Sir Humphrey Jervis, and a large quantity of the stones that comprised St. Mary's Abbey was used in the erection. In eleven years after—in December, 1687—during a violent storm, mountain

freshets, and high tides, one of the arches was swept away. As very little caution was exercised in the repair of the pier—which was done roughly and hurriedly in the winter time,—the subsequent casualty that called forth the employment of Semple was to be anticipated. Before touching upon the Diary portion of the architect's work, we will give some of his remarks:—

PREPARATIONS TOWARDS DRAWING A DESIGN OF A NEW BRIDGE, ETC.

"Whilst I was going on with the repair, Mr. Prior, several of the aldermen and other principal gentlemen of the Corporation of the city, often visited me; and when they found me near the accomplishment of it, gave me great encouragement to engage in rebuilding the bridge, which somewhat alarmed me, as I was at that time engaged by contract in building St. Patrick's Hospital, two houses for the Rev. Dr. Leigh in Capel-street, and one for Arthur Newburgh, Esq. I was also engaged in the conduct of the building a new house for his Grace the Lord Archbishop of Dublin, and another for Col. Ram at Gorey, &c. However, I found myself extremely inclined to engage in the building the bridge, though I well knew it would be a very arduous task.

"I had on many occasions before felt a great desire to acquire knowledge in difficult matters of arts and science, and whenever they grew easy and familiar to me I could no longer perceive in them the same charms which had captivated me. Interest alone could never sway me in these researches and pursuits, but from my earliest days I had entertained a notion that the greater the difficulty the sweeter the conquest. In short, that subject took firm possession of me, and I applied myself to search my books, of which I had a fine and valuable collection, and I found in them numerous elegant designs; but as touching the laying a foundation in deep and rapid rivers, all the authors were in a manner silent. This deficiency in so many excellent authors greatly amazed me; and in hopes of procuring better instructions I settled my domestic affairs and went to London, where I procured about £40 worth of books, plans, &c., which I ordered to be sent after me, and returned home within the compass of fourteen days, full of hopes that by their assistance I should be able to pick out something for my purpose; but after I had attentively perused them, I found myself in the same situation I had been in before.

"I cannot describe the indignation and sorrow I felt at finding an art of such public utility, as that of building bridges confessedly is, so shamefully neglected. However, these books furnished me with many useful hints and observations, some few of which I shall give for the improvement of the young student, and as necessarily connected with the subject I am treating."

[Here follow historical accounts of some remarkable stone bridges in foreign countries from the earliest times, with abstracts from the writings of Leon Baptista Alberti, Andrea Palladio, Scamozzi, and Sebastian Serlio, and brief accounts from other writers on the Continent on methods of bridge-building. From the extract we have given above it will be seen, judging by the time (1751), Semple had a pretty good practice. A journey to London, even till a more recent period than the architect's day, suggested the prudent resolve of making one's will. Men are more

careless now, and hardly think it necessary to trouble themselves about their wills when about to proceed to America or Australia. It is "only a run," and domestic affairs are left to the care of the housekeeper or the servants.

Preceding his extracts from the above-named authors, our architect makes some judicious remarks, which are not out of place at the present hour.]

"It has been laid down by the writers on science in general, that excellence in any particular branch is only to be acquired by attentively and diligently perusing and digesting the works and designs of the most eminent authors and artists, but the young student should always be on his guard when he is about designing anything, that a too lively or overheated imagination does not lead him unto chimeras which a sober judgment would not approve. This error may be in a great measure avoided by paying a proper deference to the sentiments of learned men. For my part I think a young man will gain greater reputation by being an humble copier of an ingenious artist, than to pretend to excel every one by the fertility of his own imagination. But in such matters where you cannot be furnished with precedents, you are under the necessity of striking out something from your own brain. Yet these are not to be abortive, misshapen beings, the mere creatures of a wild fancy, but the fair, the legitimate offspring of a well-regulated judgment; this observation deserves to be well attended to in all cases, but particularly in those where a miscarriage may be attended with fatal consequences."

[Next, the architect gives the soundings and borings of the former bridge, with a plate illustrating the plan as it existed in 1751, before he commenced the rebuilding. In this plan is exhibited the base of the statue of George I. which formerly stood on Essex Bridge, and which was subsequently erected in the Lord Mayor's garden in Dawson-street.]

SEMPLE'S REMARKS ON THE CAUSE OF THE FAILURE OF THE FIRST BRIDGE.

"All the piers were originally built on frames of oak of about 9 or 10 inches square, the clear of which was just the size of the pier from out to out, the bottoms were made of 2-inch oak board dovetailed into the frame cross-ways, but done in very coarse rough work; these frames were laid on the bed of the river on which they built the piers, the increase of the rapidity of the water between the piers sunk and carried off that bed of the river left between the piers, and continued to sap and gull the frames every flood, and the base of the effigy [statue] gave a new direction to the current, for that on the south side was directed to the pier, L, where it was obstructed by the ruins of the former arch, and as it hurried back to get into the third arch it sapped the foundations of the footway M, and on the north side the strength of the current was directed to O, where it did full execution on that pier, and then made its way to R, where, meeting again with the currents that ran through the third and fourth arches, they struggled together, and so wore away the bed of the river to 23 ft. 8 in. deep, and sometimes deeper just as the flood and ebb happened to leave it."

[The bridge that Semple removed had seven arches; the one he built and now about being removed has five. L was the first pier of the

old bridge on the south side, & the second, & the fifth pier. The table of the different borings given by Semple is interesting.]

REMARKS UPON THE BED OF THE RIVER AND PLANS FOR THE NEW BRIDGE.

"From these borings it appeared that the bed of the river was chiefly composed of coarse sand, gravel, mud, and other loose fluctuating matter brought down by the land floods, but chiefly since the north quay walls were built, and so, adding them all together in my own mind I found that the sum total was, that I could not have the least hope of building a substantial bridge in that place without removing all the loose substance, and getting down to lay the foundation on or tolerably near the rock which we found quite across the river, but how, or by what means to get that accomplished in such a rapid river, and particularly in the north side where we found the rock in some places upwards of 27 ft. under high water, was the sole circumstance that quite confounded me, and threatened to frustrate my intentions of building a bridge that should last as long as the little adjacent mountain called Sugar-Loaf-Hill, as I had determined and made some declarations to that purpose.

"To conquer all these seemingly insurmountable difficulties engaged my whole attention. Many schemes and projects crowded, and some of them made deep impressions on my imagination; but whenever the apprehension of the danger the workmen would be in, in case the inclosure I thought I had projected burst in upon them, they all vanished.

"In this distressed situation I had recourse to my books, all of which could not afford me any sort of encouragement. They told me, indeed, to make an inclosure, and so might they tell a man that to measure time he must make a clock; but what would that avail to a man that had never made nor seen any kind of machine for that purpose? However, I proceeded to form my plan of the bridge, in projecting of which I found myself most plentifully stored with precedents, and yet after all (in justice to Mr. Labeley) I must declare that the Westminster Bridge deserved the preference, therefore (save only in some particulars) I took it for my precedent."

[The Westminster Bridge alluded to by Semple was the old structure built in 1740 by Labeleye, a Swiss engineer. Caissons were used by him in laying the foundations of that bridge, after the following fashion:—When the bottom had been prepared and levelled a hollow framing was brought over the spot, and as soon as a sufficient quantity of masonry had been piled upon it, it was pierced and sunk. Caissons are of late years made open at both ends, and filled with concrete to insure solidity. As we proceed with our extracts it will be interesting to hear how our Dublin architect managed to successfully lay his foundations, and build old Essex Bridge.]

(To be continued.)

HOW TO DEADEN MUSIC SOUNDS, ETC.

We have received several queries, asking us to mention the best methods known to deaden music sounds, or as non-conductors of sound. As each case must be judged by its peculiar condition and surroundings, to suggest a really practical remedy an examination on the part of a practical or professional man would be necessary. In the hope, however,

of eliciting some cheap and really serviceable method from some of our numerous readers, we give the gist of two among the rest of communications we have received during the last month upon the subject:—

"You will kindly give advice, and say the best and cheapest way to deaden music sound, where partition cannot go. Allow me to say, as paper will have to be substituted, your early reply will oblige.
"H. B."

"You will oblige by naming in your next publication the best non-conductor of sound, which can be made available by plastering, or otherwise, to a wall dividing two houses, where the noise from one of them resounds unbearably in the other.

"QUEERIST."

We have known several methods which have been tried with partial success by the putting of oil-cloth, floor-cloth, or felt on the walls. Where it can be done, the putting up of a studded partition, and filling up the space between the dividing wall and the face of the false partition with peat sods (turf). This description of "bricknogging" is light, throwing little weight upon the floor, and turf may be said to be a non-conductor of sound. The radical defect in all our modern, cheap, and speculative dwellings is, that the dividing walls are not of sufficient thickness or solidity to deaden sounds. A piano in tune or out of tune, well played or badly played, placed against some of these dividing walls is often a nuisance to the residents in the next house, particularly to invalids or those of a sensitive organisation. In hearing as well as in smelling, the power varies much in individuals—and what may be a pleasure to some becomes a positive pain to others. In the placing of a piano a relief may be afforded if one's neighbour wish to oblige. By the placing of pieces of cork or india rubber under the legs or castors of the instrument, the sound will be considerably deadened. If the joists of the floor run parallel to the party wall, instead of their ends resting within, the sound will also be considerably less.

Some of our correspondents will probably state in our next issue their experience of the methods they have found to result in a practical benefit.

CORRESPONDENCE.

SOME SANITARY SUGGESTIONS.

We have received the following letter from the writer, with a request for its publication, with which we willingly comply. He informs us that he has transmitted a copy of it to the Lord Mayor. No doubt, ere this he has received a courteous reply:—

To the Right Hon. James William Mackey,
Lord Mayor of the City of Dublin.

MY LORD MAYOR,—Now that your lordship and the members of the Corporation have emerged from the gas question, greatly to the advantage of the ratepayers of the City of Dublin, possibly your lordship and the Town Council might find leisure to give your attention to the advisability of having the dust-pits, &c., attached to the houses in this city emptied and cleansed by contractors, same as in the cities and towns of England, and thereby place a check on the rise and spread of disease, which must certainly occur if the present state of things continue.

The men who formerly obtained a living by doing this sort of work have nearly all disappeared, and the remaining few look for exorbitant prices for doing the work required of them, on the grounds that they have great difficulty in getting rid of the rubbish, even when conveyed at very long distances. I am aware that the owner of certain premises has been five weeks endeavouring to get a man to do such work for him, liable to be summoned by the inspector and fined by the magistrate, although he was quite willing to pay 20s. for doing the work, such as has often been done for him and others for as many pence. Every struggling householder in this city is in this position; and the result, it is feared by many, will be a large increase of fevers, &c., if not plague, when the warm weather sets in. In London, Liverpool, and Manchester I am aware that this kind of work is done by contractors, and I believe that the householders are to some extent rated for the doing of it.

The contractors to the Corporation of Manchester empty a large portion of this rubbish, coal, ashes, &c., into a deep valley lying between Rochdale-road and Oldham-road, on which houses are built as it becomes level with both roads. Could not an arrangement be made under which the greater part of the Dublin rubbish would be emptied on both Clontarf and Irishtown slob lands, and so reclaim them from the sea?

If your lordship and the members of the Town Council would have a similar system adopted in Dublin, the measure would be gladly welcomed by the ratepayers; and I believe that such a system of contracts would place almost as much patronage, &c., in the hands of the Corporation as the gas bill could have done had your lordship succeeded in having it passed through both houses of Parliament. —I have the honor to be, My Lord Mayor, your lordship's obedient servant,
JAMES KIRBY.

41 Cuffe-st., May 21, 1873.

NATIONAL (?) EDITION OF IRISH NOVELISTS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Will you please afford me room to make inquiry through your columns, as to the accuracy of the following report which has just reached me, viz.:—"That the printing, wood-engraving, and paper, of 'Smyth's National Edition of Irish Novelists' are executed and manufactured in England or Scotland"? If the answer be in the affirmative, I trust sincerely that my countrymen will prefer those editions which are openly advertised as being published elsewhere than in Dublin, rather than patronize the deceptive and anti-national conduct of the publishers of the works named.—I am, sir, truly yours,

May 27th, 1873.

AN IRISH READER.

[We think we are right in stating that the answer to our correspondent's inquiry must be in the affirmative. In this opinion we are backed by the Dublin Correspondent of our valued contemporary *Press News*, who writes thus in the current number of that journal:—"The works of eminent Irish novelists now being issued in weekly numbers and monthly parts, and which the people here are asked by advertisements and placards to encourage as being the production of native talent, are, we have just discovered, printed in London. The illustrations are sketched in Dublin, the blocks being sent over and engraved in London." We shall inquire further into the matter.—ED. I. B.]

BUILDING SOCIETIES.

THE Building Societies' Protection Association has issued its Reasons against the Government Bill. The committee of this association give nineteen reasons why they cannot advise the societies to accept the bill: many of these reasons are cogent. Speaking on behalf of 1,300 building societies, it is of opinion "that instead of consolidating the law, as recommended by the Royal Commission, and provided by Mr. Cross's bill, this bill [the Government] would add one more statute and a large number of the clauses of two other statutes (the Companies Act, 1862, and the Amended Act of 1869) to those affecting such building societies as register under it, making the law far more complicated than at present." The committee publish some judicious extracts from the second report of the Royal Commission on Building Societies, which they believe prove their view of the case. The Royal Commission reported—"But confining ourselves to the building society, we have come to the conclusion that the institution, however modified since it was first authorised by law, deserves to be maintained as one which within certain limits usefully supplements and does not unfairly compete with the joint stock company." We have previously expressed our opinions of building societies in general. We believe that they are a useful organisation, and can be made still more useful and beneficial to the classes for which they were first intended. Abuses have, however, crept into their management, and there is every need of a reform.

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD E. BRASH, ARCHITECT, M.R.I.A.
F.S.A., SCOT.

BOYLE.

THE abbey church of Boyle is situated in the town of Boyle and County Roscommon. It was erected in the infancy of the Cistercian Order, and appears to have been the second of their establishments founded in our island. At A.D. 1148 we find the following entry in the *Annals of Boyle*:—"The Abbey of Boyle was founded in this year; the year from the Incarnation of our Lord 1148." This statement is, however, doubtful. A Cistercian house was founded in the County Roscommon about that year, but not at Boyle. Archdall states that this house did not originate at Boyle, but at Grelledinach, on the 16th of August, A.D. 1148; and that Peter Mordha, a man of great learning, was the first abbot. (*Mon. Hiber.*, p. 601.) Ware states that it was founded in 1148 at Grelledine, that it was removed to Dromconaid, then to Bunfinny, and finally to Boyle, in 1161.

The annals above quoted appear to correct themselves at A.D. 1161, as follows:—"The Abbey of Boyle was founded in this year, near Boyle, from the beginning of the world 6,860 years; it was first opened at Grelledinach, secondly at Drumconaid, third at Bunfinny, and fourth at Boyle. In the first place Peter O'Mordha was Abbot; in the second Hugh O'Maccain, for two years; after him Maurice (O'Duffy), who kept it in the same place for six years, and at Bunfinny for two and a-half, but closed his abbacy at Boyle, where he presided thirteen years and a-half."—(*Annals of Boyle*.)

The following notices are taken from Archdall:—

"A.D. 1174.—The abbot Maurice O'Dubhay died December 27th, and was interred here.

"A.D. 1195.—Died Florence, the son of Riagan, of the family of Malruanaidh and bishop of Elphin; he had been abbot here.

"A.D. 1196.—This year Connor Mac Dermot, Lord of Moye, took on him the Cistercian habit, and became a monk in this abbey.

"A.D. 1218.—The abbey-church at Boyle was consecrated.

"A.D. 1230.—Died Donn Sleibhe O'Hionmainen, a reverend and holy monk, and principal master of the carpenters in this abbey.

"A.D. 1235.—The English forces, under the joint command of Lord Justice Maurice Fitzgerald and M'William, encamped within the abbey walls, and sacrilegiously seized all the goods, holy vestments, chalices, &c., belonging to this monastery, and very irreverently stripped the monks of their habits, in the midst of their cloister.

"A.D. 1243.—In this year Teig, the son of Hugh, and grandson of Cathal Crobhderg, after having taken prisoner Cormac Tomulty, forcibly brought his mother out of this abbey, and gave her up to Constantine O'Reilly; Teig then went, with a few men, intending to hold a meeting with Constantine, by whose direction, and at the joint instigation of the English and Irish, he was treacherously seized, his son killed, and his own eyes put out.

"A.D. 1315.—Rory O'Connor pillaged this abbey."—(*Monas. Hiber.*)

At the period of the suppression of this house, Tomultach Mac Dermot was abbot. By an inquisition made 30th November, 1569, Queen Elizabeth granted this abbey and its possessions to Patrick Cusacke, of Gerrards-town, in the County of Meath; in this document the existing buildings are thus described:—"One acre of land, in which were the walls of a church and belfry, cloister, hall, and dormitory."—(*Ibid.*, p. 604.) At present the only existing remains are the walls of the abbey church, and the enclosing walls of the cloisters. Archdall, who published his work in 1786, thus describes the buildings as then existing:—

"The remains of this ancient erection are

sufficient to shew its pristine magnificence. The ruins lie at the back of the town, and are enclosed in the demesne of the Earl of Kingston. The chancel and a small chapel on either side are rooted; the great arches which supported the tower were forty-five or forty-six feet in height, but the ground is now so raised as to cover all the bases of the columns; one half of the arches are supported by round pillars, built of cut-stone, of various sizes, and the rest are a group of small columns, or mouldings; all the spaces between these pillars are now filled up, so as to make a solid wall, and which, as we suppose, was done in the reign of Queen Elizabeth, when the abbey was converted into a place of defence. Some of the capitals are plain, others are ornamented with carvings, and the east window was grand and lofty. There are no remains to be seen of the cloister, that part being long since converted into a barrack."—(*Ibid.*, p. 606.)

The above passage conveys a tolerable idea of the present state of the buildings, with the exception that the entire has been cleared of all rubbish and debris, and all trespass or injury has been provided against; the cloister is no longer a barrack, and an air of quiet and seclusion reigns within its ancient walls.

The abbey-church of Boyle must have been a noble building when in A.D. 1218 it was consecrated to the services of religion. The present remains consist of the principal part of the church, and the enclosing walls of the cloister, on two sides of which are some remains of the kitchen, refectory, and hospitium. The clearing out of the rubbish, &c., and careful preservation of the existing remains, is due to the late Captain Robertson, in whose garden stood this venerable pile.

The church consisted of a nave with aisles, a chancel, a centre tower, north and south transepts, and two eastern chapels to each; the north and south aisles of nave have entirely disappeared. The west end of nave is lofty, with shallow, but broad buttresses, running up the face of the gable, the quoins of which finish with a bold torus. The western doorway is rather small for so fine a church; it is of Early-Pointed character, with good jamb and arch mouldings, and external label; it is 4 ft. 8 in. in clear of inside jambs. The west window is a single lancet of transitional character; the jambs are moulded, and finished with banded shafts; the arch is moulded and enriched with chevron ornament, and crowned by a label. The internal jambs also finish with banded shafts, but the arch is plain.

The nave is 131 ft. 6 in. in length, and 24 ft. 3 in. in breadth, clear of piers, which are 8 ft. 8 in. thick. The aisles were 9 ft. 1 in. wide; this makes the entire breadth 49 ft. 9 in. The entire length from east to west is 180 ft., and the breadth across the transept is 72 ft. 6 in. The aisles are entirely gone, excepting the foundations of external walls.

The arcades of the nave had eight bays; four of the arches remain at the north side, but these are built up and propped by rough buttresses, constructed to prevent what remains of the arcade from falling outwards, to which it has a decided inclination. The three westernmost piers are rectangular, with moulded responds, which have richly-carved capitals; these have octagonal abaci, from which spring the soffit mouldings of the arches, which at this side are Early Pointed. The fourth pier is octagonal. The fifth, sixth and seventh were square, the angles enriched with semi-shafts, and also one on each face; the arches which they supported are gone, and portions of the piers only remain.

The arcade at the south side is perfect; the three westernmost piers are rectangular, and correspond with their fellows at the opposite side, but the capitals are very richly carved, men and animals being introduced; the human figures appear to be warriors wearing kilts, and are interesting studies, shewing the costume of the period. Four of the piers are cylindrical, 3 ft. 8 in. in

diameter, having moulded bases with the tongue or leaf ornament on the angles of the plinth; the capitals are of the cushion form, with fluted bells. The arches at this side are all semicircular. The clerestory windows all remain; they are small semicircular-headed ones, perfectly plain. Between the nave arches are moulded corbel-shafts, with richly-carved caps, from which spring the groin-ribs of the vaulting; some of these terminate in knots of foliage.

The tower is at the junction of the nave, chancel, and transepts, resting upon three semicircular and one pointed arch; these are 46 ft. in height to the soffets, and the spaces between the piers are the full breadth of nave and chancel. Nave arch is of two square orders resting upon corbel-shafts, which have moulded caps enriched with a cabled ornament. The arches of transepts have also two square orders, the under ones springing from semicircular responds, having cushion capitals. The chancel arch alone is pointed; it has three square orders with a square label; the piers on which it rests are moulded, and have cushion capitals with scalloped bells.

The tower, like all those of all the Cistercian houses in this country, is a square, massive feature, perfectly plain, and at present scarcely rising above the gables. The chancel is 22 ft. 9 in. from east to west, and 22 ft. 2 in. wide; it is covered by a plain, high-pitched, pointed vault. The east window is Early Pointed, of three lights, with plain jambs and label mouldings.

The transepts are 24 ft. 8 in. wide, exclusive of the eastern chapels. In the gable of the north chancel is a pointed doorway; at each side a small semicircular-headed window-ope. There are no lights in the south transept, save a pointed oval in the top of gable. There are two chapels off each transept; those attached to the north are 9 ft. square; those to the south, 8 ft. 3 in. each. The entrance arches are Early Pointed, springing from piers, variously moulded, and enriched with shafts having cushion capitals with fluted bells; they are covered by pointed vaults of high pitch, and each lighted by a small semicircular-headed ope at the east end; in the south wall of each is a small square aumbrey or recess, perfectly plain. There is neither sedilia nor piscina, unless the former may be considered to be represented by a recess in the south wall of chancel 6 ft. wide and 1 ft. 9 in. deep; it has a torus moulding on the angles of jambs and arch.

All the Romanesque masonry is well finished; the piers, arches, responds, window-dressings, quoins, &c., are executed in a light brown freestone, and of small neatly-cut ashlar blocks. The piers of nave are built of such material, in courses of from 9 in. to 12 in. high. The aisle walls shewn on accompanying lithograph are a restoration to preserve the uniformity of the plan.

It is quite evident that the date given in the *Annals of Boyle*, already quoted, for the foundation of this church—namely, 1161—is fully borne out by its existing details. It was commenced towards the close of the Romanesque period, and would appear to have been carried on so slowly as not to have been completed until the First Pointed style had been fully developed, as its consecration took place in A.D. 1218. Hence the anomaly of round arches at one side of the nave and pointed at the other; of the three round arches under the tower, and the fourth pointed, though springing from Romanesque piers; of the pointed arches of side chapels, also springing from Romanesque piers. It is more than probable that the building had been far advanced in the latter half of the twelfth century; that it had stood still, owing to want of funds or the distractions of the Anglo-Norman invasion; and that, when resumed, it was completed in a style then become fashionable. The west doorway I should consider an insertion, as the west gable must have gone up to a certain height with the nave piers and arches. The area of the cloister-court is still enclosed, but the ambulatory and arcading no longer exist; on

two sides are some remains of the kitchen, refectory, dormitory, and hospital, in a very ruinous state.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

SOMER'S-HILL.

On the high paths and low paths of this once gay suburban thoroughfare many of our boyish hours were idled. Its dwarf walls were often vaulted over, and ran along with intermittent leaps across the openings. Waste spots and pits and sandholes were out and about here midway, which are enclosed for many years—some built upon, others not, but all shewing that little or no improvement has taken place. Many of the houses in this quarter are well built, and date back to the close of the eighteenth century. Early in the present century several of our respectable city gentry resided on the hill, as it was accounted a most healthy situation, and before it became so crowded with buildings right and left, a splendid view was to be had of the broad plain of Fingal, Ben Heder, and the bay. Before the era of the canals this was the direct summer drive to the Green Lanes, across the Tolka; but when "Nobody's Land" was reclaimed from the sea a more eastern road divided the honours with the travellers and visitors *via* Somer's-hill. These last changes are matters more within the province of the "Oldest Inhabitant," who we will let describe what came under his ken during his eventful years:—

"Somer's-hill, sir, when I was a lad, was a bright and busy thoroughfare, as unlike what it is now as summer is unlike winter. The first residents, particularly those who resided in the houses situated on the right-hand side as you ascended from the city, were all rich and well-to-do people; indeed, sir, this hill remained a most aristocratic neighbourhood till about forty years ago. After that period the old residents removed gradually, the rents went down, and a less independent class of persons became the tenants. The idea of letting a house to lodgers on the hill, some fifty or less years ago, would be looked upon as treason.

"At the commencement of the century the once famous Farming Society was established on the western side of the hill, and continued to flourish for many years. Here prizes were offered for all kinds of agricultural improvements in tillage, and implements, and rearing stock. What were called the 'practices of Fingal' then held sway, and the farmers and ploughmen of that district challenged the whole kingdom to outstrip them in their modes of husbandry. Curious modes some of these were, sir, and queer notions the sons of Fingal had about tillage in general, and green cropping in particular. A gentleman's steward once advertised, amongst his other acquirements, that he was well acquainted with the *practices of Fingal*; and, on being examined, he maintained that less than six horses in a plough could never answer in any ground, and that undoubtedly fallowing was absolutely necessary and superior to any other preparation for corn. The old farmers of Fingal were as stubborn as pigs, and the Farming Society had a hard battle with them to induce them to leave off their old practices. They cared little about drainage or spreading limestone gravel, and their ploughmen were quite as stubborn as their masters. The ploughman would sooner leave his situation than plough even sand with less than four bullocks. The old darling course of tillage adopted by these renowned farmers was wheat and oats, oats and wheat, and so on *vice versa* until the land was completely exhausted. I have lived, however, to see the farmers of Fingal learning some wisdom, and make amends for the ill effects produced by their antiquated practices. Some of the old walls of the Farming

Society's buildings are still standing, and you will see as we go through how modern exigencies have been accommodated in the putting up wretched shop-front fixtures on either side of what was the entrance gate to the great courtyard. It is many years (the exact date I can't remember) now since the Farming Society on the hill ceased as such, and became absorbed in the Dublin Society's appointments elsewhere.

"Higher up on the hill, with a large entrance gate surmounted by the royal arms, exists the old-established coachmaking firm founded by the well-known John Hutton. This establishment has a history, sir, and to trace it would be to go back a good way beyond the present century. Coachmaking in the days of the Irish Parliament was a grand trade in Dublin, and the most noted members of the craft were the Colliers, of Kevin-street. That once great firm died out early in the present century, and the founder of the firm on Somer's-hill, I believe, was its legitimate successor. The Huttons have always maintained a reputation for good workmanship, and the father of the present proprietors was a careful, active, intelligent, and thoroughly business man. He was very particular about the character of his workmen and the class of work they turned out, and until within a short period of his death he continued to manifest as much interest in the business of his establishment as those upon whom it in future devolved. A member of the Hutton family once contested the representation of the city with O'Connell, and was for a time very popular, but all the other members of that family kept clear of active politics. The late Thomas Hutton was one of the old school in habits and manners, and though habituated all his life to business, could act the gentleman with an aristocratic bearing among gentlemen. Though not mixing, as I have said, in active politics, his presence was occasionally discernible at select or special meetings of the nobility and gentry in the metropolis. The late Thomas Davis, the founder of the Young Ireland school of writers, notwithstanding his different politics, was much respected by the Hutton family, and was a visitor, whenever he could spare time, at their country mansion, Elm Park. Had poor Davis lived, sir, he would have been married to Miss Annie Hutton; but his death taking place in 1845 the apostrophised of his songs mourned over his early grave, and in a few short years followed her sincere lover. The chisel of Moore, sir, has pretty fairly preserved to us the lineaments of the betrothed of the poet. I stood beside and conversed with the artist twenty golden years ago, when he was preparing the model. Ah me! yet these, sir, are but things of yesterday; but the memories are worth recalling, and while they are fresh and green they will flow back again.

"Several years ago the Carpenters' Society had a house of call near the old Farming Society. This house was kept by an honest and conscientious publican of the name of Luke Dillon. I wish all publicans and sinners were like Luke. He coveted no man's money for the sake of making him drunk. Luke lived to a ripe old age, respected by all, drunkard and water-drinker. His garb belonged to the last century in cut and pattern. His swallow-tail was of the best blue cloth with brass buttons, his hat had a broad brim, and his shirt displayed plaited frills as white as driven snow. If I mistake not, Luke was originally a 'chip' himself; but be that as it may, he was respected by the craft, and he reared some of his sons up to handle the jack plane. The 'house of call' existed for many years, but after Luke's death the business gradually declined.

"At the period previous to Thomas Davis's death there lived on Somer's-hill a young barrister named MacNevin, much respected by the former—in fact there was a mutual attachment between both. MacNevin, when about to engage upon any literary work, generally consulted Davis, and Davis often called upon MacNevin. It is nearly thirty years since I

heard poor Mac for the last time speaking in a most passionate manner on some Papal rescript or message to Ireland, which, in the opinion of the speaker, unwarrantably interfered with the political liberties of the Irish people. MacNevin got a most enthusiastic reception at the meetings on Burgh-quay. MacNevin had a great aptitude for literary work, and a little counsel and encouragement would induce him to essay the most difficult task. He projected many works, but only lived to complete two or three, which are among the late James Duffy's publications. It was said that the death of Davis preyed upon the mind of MacNevin. That the latter deeply regretted the companionship of the former, there can be no doubt; but that Davis's death should drive poor MacNevin insane, I could never believe, sir. MacNevin, like Davis, was respectably connected. I have listened to both, I have read all the works of both, and I have regretted the early death of both, as doubtless you do yourself.

"About the same date as that to which I am referring there lived on Somer's-hill, near to MacNevin's residence, H. G. Curran, a literary and legal worthy, who, though bearing a distinguished name, fell far short of the great original. Some of his writings, however, deserve to live, and are racy of the soil.

"From this part of the hill facing the coach factory on to Rockingham-street lived several noted personages within the last forty years. Authors and authoresses, merchants and manufacturers, retired captains and majors, and some personages of title were among the number. Within a few doors of Jutland-street lived for many years the well-known annalist and antiquarian writer, John D'Alton. I remember with what zest I used to read his topographical and antiquarian sketches of remarkable places in the *Irish Penny Magazine* forty years ago. D'Alton, sir, in my opinion, was a much-neglected and somewhat badly-used literary man. He collected a great amount of valuable historic materials, which remained unpublished till the period of his death, which took place a few years ago. He often appealed to the public and to learned bodies to assist him in giving these materials to the public, but appealed in vain. His published volumes are very useful compilations, and ought to be in every national library.

"Two or three doors beyond D'Alton's house lived an aged and remarkable lady of title, whose love for the birds was equal to her kindness to the deserving who needed assistance. She outlived her husband very many years. She was patroness of home missions and Sunday schools and other moral and juvenile assemblies. Lady Harbourall was known to every one whose business led them through Somer's-hill. When at home, she was constantly seated in her arm chair within her parlour window, the lower sash of which was always raised in fine weather. She enjoyed a look out, and a recognition from all passers whom she seemed to know. The house sparrows of the neighbourhood came every day in flocks to partake of the repast that was spread for them on her ladyship's window-sill. Breads, fruit, sweets, drinks, and other provisions, the noisy chattering had in abundance, and even cotton ball, tow, feathers, wool, and other ravellings were cast adrift in the area to enable them to build their nests. The sparrows that frequented her ladyship's window-sill were so tame that they would almost allow themselves to be handled. Among her ladyship's domestics there was a black servant man, who took unto himself a white wife. On the score of beauty, Sambo had the advantage, as also in the matter of intelligence. Man and wife lived with her ladyship for many years, and had a good place of it. Sambo and Susy had no children born to them to inherit their parents' hard savings, which, it was supposed became considerably augmented on the death of their mistress, who remembered them in her will. If the house sparrows on Somer's-hill could chatter an 'in memoriam,' I am sure, sir, they would have done so in melan-

choly chorus on the death of their benefactor. It was whispered that the birds were mentioned in a codicil to her ladyship's will; but as they could not convey their feelings in intelligible terms, the hard-hearted executors left the poor sparrows out in the cold.

"On the left-hand side of the hill, in a house close by to a dead wall which existed some years ago, lived a Mr. Corlet, a respectable and ingenious gentleman, who was the chief manager of a large manufacturing concern in the neighbourhood. Mr. Corlet invented and patented some improvements in coach and carriage springs, and opened a business on his own account, in which he invested a considerable sum of money. The speculation failed, but the improvements were pirated, modified, and adapted by others, who reaped the advantages. A daughter of Mr. Corlet wrote some interesting sketches and stories in the magazines of the day, which were much admired, and local incidents were introduced into some of her sketches.

"A piano manufactory was, I believe, carried on for some years on the hill, but it dwindled down to tuning and repairing before it died out. I remember, sir, many pianos being made in this city and exported to England, where they were sold by the London makers as London make to Irish purchasers. I have known from 80 to 100 guineas given for a supposed London-made piano which was actually made in this city. The purchaser refused to give 50 guineas to the Dublin maker for a similar piano which was made to match. He went to London content to pay nearly twice the sum for one with a London maker's name inserted in the wood. This, sir, was all that was new about it. Many people die with their illusions undisputed.

"A few paces down Rockingham-street, from the intersection of that street with the Hill, lived for some years the lamented John O'Donovan, a name well known to you, Mr. O'Flanagan. It is hardly necessary for me to say anything concerning that industrious and able Celtic scholar. His labours are in the recollection of the public, and he was the friend, assistant, and companion of many of those whose names I have already mentioned to you in my gossiping memories. Some one should, I think, give his life and literary remains to the public; they are well worthy of collection and record. On the Ordnance Survey and first Memoirs, in the pages of the *Dublin Penny Journal* and *Irish Penny Journal*, in the Irish Academy and other kindred societies, in public library and private study, the brain and hands of poor O'Donovan never rested. Lavish of literary and scholarly wealth, modest in pretensions, careless as to his personal comfort and health, he worked and walked and worked in all weathers with the unceasing constancy of the pendulum swing. Battles might change the map of Europe, monarchs might die, and cabinets collapse, but still the devoted Irish Scribe jogged along oblivious to events that roused other men's wonder. Some of our literary men, sir, are fops and dandies; John O'Donovan was a ploughman in Irish fields of thought and research, and, ploughman like, he turned up the rich sod with much unrequited toil. What memories! I have read his early essays with an enthusiasm I cannot describe, followed his hearse, and stood over his narrow grave in the city Necropolis with others of his contemporaries, and mourned his death among the tombs, as I have done many times since.

"Somer's-hill and neighbourhood have given a local habitation and a name to other worthies that I may mention to you on a future occasion. One of the most noted was a bishop of the 'Disestablished' church who proved his ingenuity was equal to his eccentricity by building his house from the top downwards—a feat that has hitherto baffled the tarnation cute Yankees."

As business pressed, we did not urge our cicerone to continue his narrative further. He felt a little tired, like ourselves, from our long walk during the day, so we parted, after a few minutes' private conversation with the "Oldest Inhabitant."

ORATORY, SION HILL CONVENT, BLACKROCK.

WITH this number we give an illustration of an Oratory erected in the lawn of the above convent. The materials are Dalkey granite with Bath stone dressings. The window at back is filled with stained glass, manufactured by Messrs. Earley and Powells, Camden-street Works, Dublin. The interior is laid with fancy tessellated tiles, supplied by Messrs. Sibthorpe and Son. The building was erected, from the design of Mr. J. L. Robinson, architect, by Mr. Stapleton, builder, Kingstown.

CIVIC LYRICS.—No. XXXVIII.

IRELAND'S EYE.

A public man once swore an oath
That he might never die
Until he saw the Hill of Howth
Knocked into Ireland's Eye!

His stick this man has never cut
As yet: I'll tell you why—
His finger, while he lives, he'll put
In poor old Ireland's Eye!

This great man once a notice put
Upon each hoarding high—
Each house should have a water-butt
Supplied from Ireland's Eye!

The city weeps in floods of tears,
Yet one hard heart keeps dry;
Thro' choking dust he raised these years
To blind green Ireland's Eye!

Each city has its "Steeple Jack,"
Who flies his kite on high;
But our's won't shoot a chimney-stack
In place of Ireland's Eye!

This public man still swears an oath
That he may never die
Until he turns once more his coat,
And opens Ireland's Eye!

CIVIL.

THANKS.

ONE hundred thanks will be given to anyone procuring the son of an eminent municipal legislator a permanent appointment. A Civil Service or one under the control of a corporate body would be preferred, provided that the applicant will have an assistant to do the work while he superintends. The strictest secrecy may be relied upon.

Twenty-five thanks will be given by a superannuated police inspector to any T.C. or P.L.G. securing him a small appointment. As the applicant is in receipt of a small income, he would be content with about £250 a-year or a little less. Well up to the duties of the casual ward, the padded room, or the habitual criminals' drill-parade. If required, would undertake the responsibility of looking after the sanitary inspectors.

Fifty thanks and the interest in a lease of an old property on the Coombe will be given to any governor of a prison or visiting committee who will appoint applicant to some official post. Occasional light duties not involving much labour will not be objected to, provided such duties be not menial. N.B.—Applicant's uncle formerly was head clerk in the Town Major's office.

Seventy-five thanks will be given to any city attorney who will succeed in returning advertiser as T.C. to the Puddle Dock Ward. The highest references will be given as to honour and integrity. The applicant is a good speaker, and is indifferent which party in Council treats with him. Address, "Sub Rosa."

Ten thanks will be given by a disengaged tide-waiter, whose father is a captain of long standing engaged on the Inland Navigation. Applicant would not object to a short sea voyage, as he made many trips on the water between Ringsend and the Shannon. Would take charge of the pumping machinery of the Main Drainage. Can gauge and calculate, and make himself generally useful.

A small bonus will be given by a prison warden in Mountjoy to anyone procuring an engagement for his son, a lad of twenty-two. He has grown too big to act any longer as page to the governor. Would make an active messenger to any public or corporate body. All the officers in the prison can supplement the governor's opinion of him in being a sharp lad.

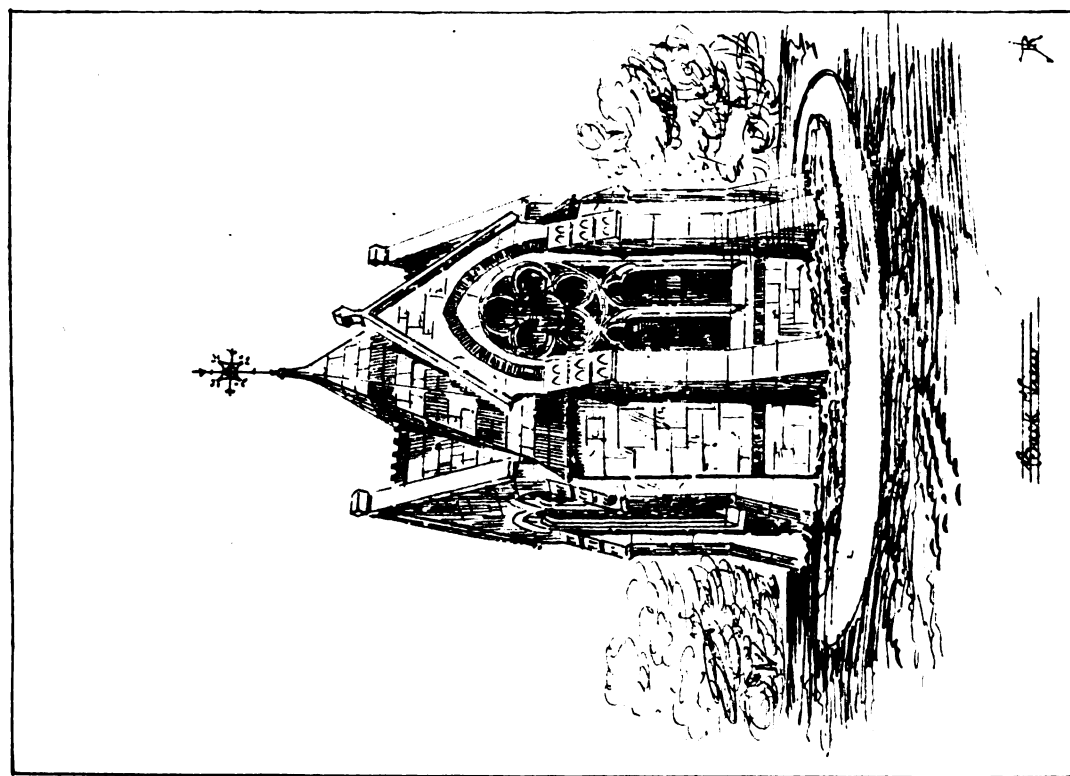
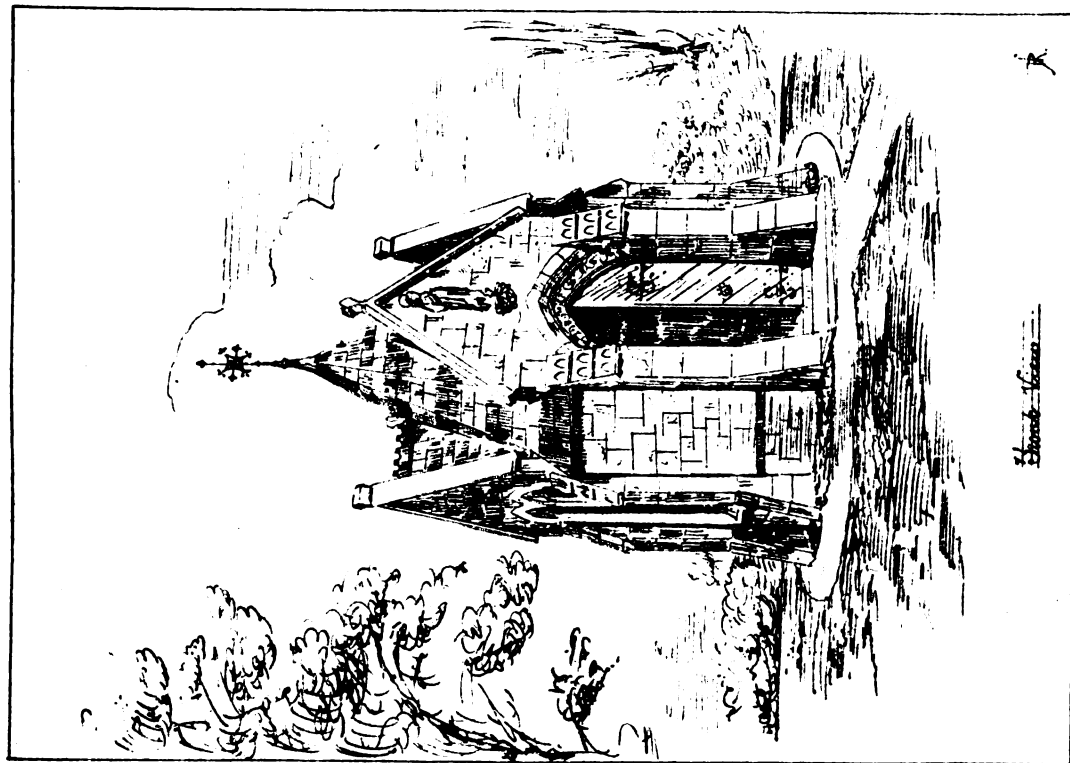
The thanks of the public and the indignant ratepayers will be given to any person procuring a copy of "Dobbs' Private Circular" containing the above and other suspicious advertisements. A copy, when obtained, to be sent immediately to the hon. sec. of the Dublin Ratepayers' Association.

THE PROPOSED ULSTER HOTEL, BELFAST.

CONCERNING this project, for which a company was started some time back, with a proposed capital of £60,000, the *Belfast Newsletter* writes:—"The plot of ground fronting Donegall-square West, extending in length from Wellington-place to Wellington-street, and in depth as far as Messrs. Archer and Sons' premises, happening to be in the market, the promoters of the scheme, with much forethought, secured it on fair terms, and instructed Mr. John Lanyon, the company's architect, to prepare a design for a hotel to occupy the whole frontage to Donegall-square, and to extend back to within 55 or 60 ft. of the rear boundary of the premises; the remainder it was intended to let for the purposes of a warehouse, for which it is admirably suited. Plans were accordingly prepared for a building to suit this site, containing restaurants, coffee-rooms, reading-room, ladies' drawing-room, billiard and smoking-room, suites of private rooms, about 30 private sitting-rooms, upwards of 130 bedrooms, and accommodation for about 100 servants, &c. The sum originally proposed to be expended by the promoters for a building to contain 100 bed-rooms, was about £35,000, but the cost of materials and labour having risen so much within the past twelve months, it was determined to get estimates at first for only a portion of the entire building, leaving the remainder to be completed when the success of the first section should be established and the increasing wants of the community require it. This was accordingly done, and a number of tenders received from eminent builders in Belfast and elsewhere, which are now under the consideration of the directors. The hotel is Classic in design; it has a central projection covered by a domed roof, with pediment under same three storeys high, charmingly broken up by pilasters with three bays. The porch projects still further than the central break, and comes close up to the footpath, over which it is proposed to carry a light iron and glass roof, to admit of visitors getting into the hotel under cover. The grouping of the chimneys and the four high roofs over the square projections at the angles, with the large bay windows under, is very picturesque and well and boldly managed—in fact, the treatment of the design throughout is very happily conceived.

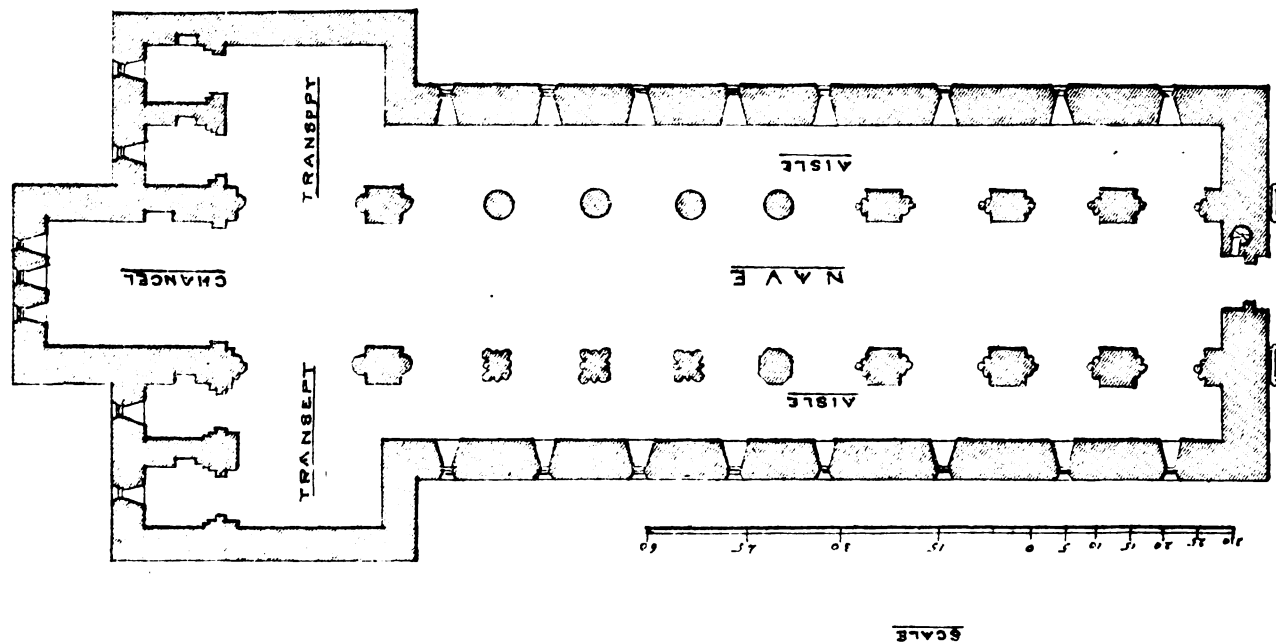
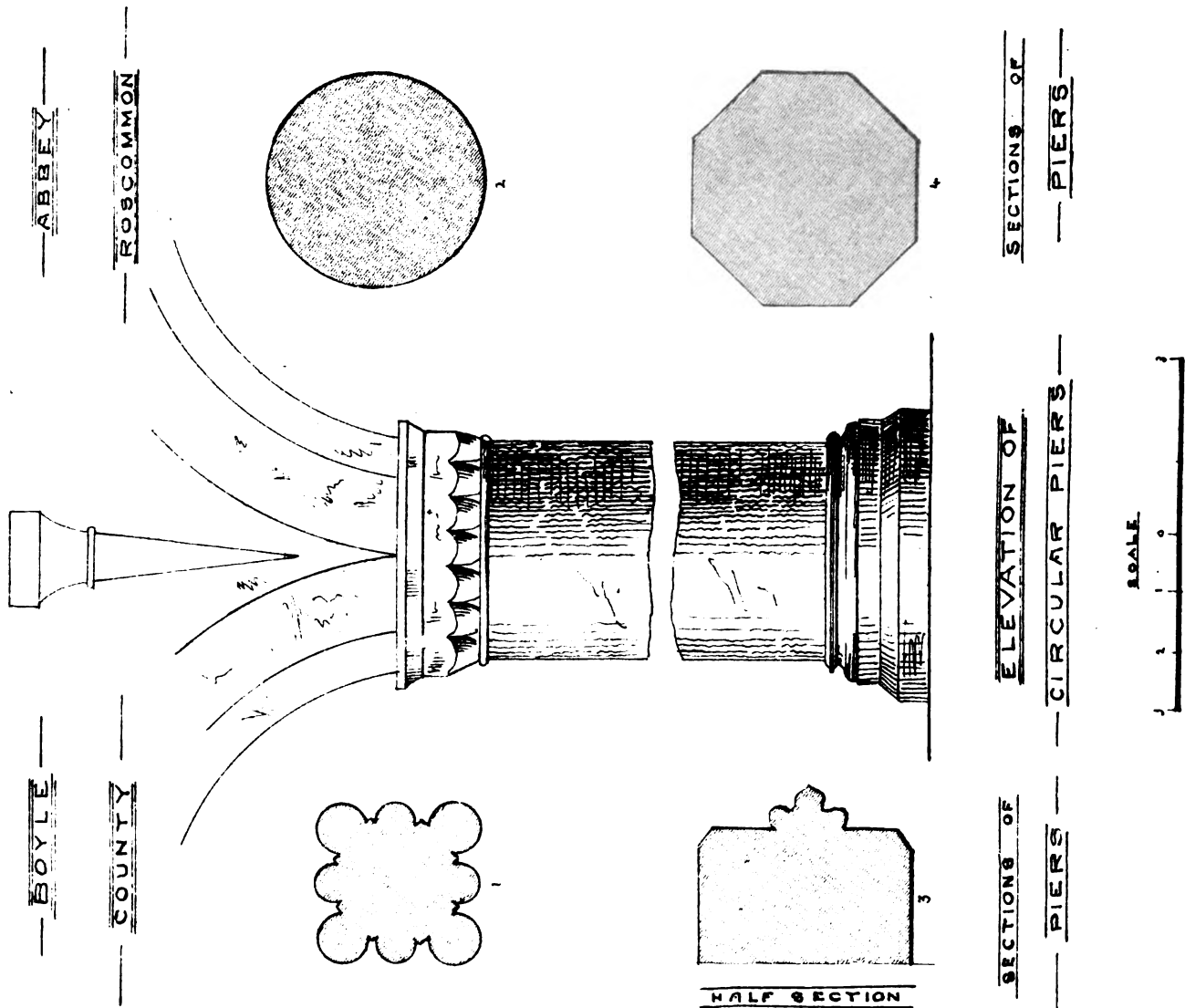
The design has six storeys—viz., a ground floor, on which are ladies' and gents' restaurants (entrance next Wellington-place), with retiring-rooms, and a ladies' club-room, for use of ladies in town from the country for the

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



ORATORY - SION-HILL CONVENT - BLACKROCK - CO. DUBLIN.

JOHN L. ROBINSON ARCHT.



THE LIBRARY
OF THE
UNIVERSITY OF CHICAGO

day. The commercial coffee-room, smoking-room, and other apartments are entered off Donegall-square by quite a separate entrance next Wellington-street. The kitchen and other offices connected with the management are also at the back, and so arranged that no smell of cooking can get into the house. The kitchen arrangements are considered admirable. The principal floor is approached from the ground floor by a handsome stone staircase. Under this, and facing the principal door is the manager's office. On it are the ladies' and gentlemen's coffee-rooms, reading-rooms, drawing-rooms, writing-rooms, billiard and smoking-rooms, and private dining or sitting-room, and large room for *table d'hôte*. We must mention the bar and service arrangements on this floor, which are excellent. The four other floors are occupied by bed-rooms and private sitting-rooms, in suites, and singly. All the corridors are well lighted, and the ventilation is perfect. All the passages and staircases are proposed to be fire-proof, and every arrangement appears to be made to secure the comfort of the guests, with economy in construction and internal working. Hydraulic lifts are proposed to be used in all places, to save labour and trouble to both visitors and servants."

The want of good hotel accommodation exists in many of our Irish towns. What is called first-class accommodation does not pay in many places, because it is not suited to the pockets of the visitors, and cheap accommodation is often very bad.

THE CONVERSAZIONE OF THE CIVIL ENGINEERS.

WE cannot speak too highly of the brilliant *Conversazione* given on Tuesday night at the International Exhibition, South Kensington, by the President of the Institution of Civil Engineers and Mrs. Hawksley. We are certain it must have been a most enjoyable treat to hundreds as well as to ourselves, who had the great pleasure of attending. It exceeded in splendour and hospitality the previous re-union. The guests were admitted at the Orchid House, Albert-road. They then ascended the main staircase, and were received by Mr. and Mrs. Hawksley in the picture-gallery at the entrance of Room VI., which, together with the staircase, was adorned with flowers arranged in the most exquisite taste, and contributed by the Royal Horticultural Society. The whole of the western galleries were thrown open, as well as the machinery in motion and the manufacturing processes in the room below. Some of the more important scientific inventions had been brought for the occasion into Rooms IX. and X., and were fully and cheerfully explained by the exhibitors. Among the more noticeable objects of interest in the machinery department was Captain Beaumont's diamond rock drill working through a block of sandstone 7 inches deep, which it perforated with a bore of 2½ inches diameter in little over a minute. The sand blast process, by which pictures and ornamentation on glass and marble were produced, afforded great interest. Next were Baily's steam telegraph, specimens of Whitworth's compressed steel, Crampton's steel and iron produced with powdered coal, Dea's hopper barge, the model of the great Bass Rock (Ceylon) lighthouse, built by Mr. Douglas, Sabine's duplex working telegraphs, Tylor's "waste not valve" for fixing in cisterns under water, Grantham's steam omnibus, Kennard's water level indicator, Legg's tobacco-cutting machine, one of the most compact and admirably contrived

machines of the kind we know of. It is fastly superseding others now in use, and the maker is supplying several for Continental tobacco manufacturers. In bread and biscuit making, confectionery, coffee-roasting, mustard manufacture, improved silk throwing machinery, printing, and in several other departments of the industrial arts, there were several machines in motion. In the outside grounds, amidst lines of Chinese lanterns, steam road machines, traction and other weighty giants were whirling with rapid expedition.

There were probably nearly two thousand ladies and gentlemen attended during the display, though we believe nearly five thousand invitations were issued. Refreshments were served at various convenient points, and the arrangements in connection were excellent. A selection of vocal and instrumental music was performed in Room VIII. of the picture galleries. Among the guests were his Highness Prince Teck, the Duke of Sutherland, Lord and Lady Sandes, Sir Morton Peto, Sir G. Belcher, Dr. Voelcker, Lord H. Lennox, and several other distinguished persons; members of the Civil Engineers, Institute of Architects, and editors and proprietors of professional and other papers in London, Dublin, Edinburgh, Glasgow, and other places. The great army of guests were received in person by the Presidents (Mr. Hawksley and Mrs. Hawksley), supported by the Hon. Secretary (Mr. Charles Manby). The lighting of the galleries was superb, doing full justice to the pictures and the rich toilettes of the ladies. A special catalogue of the pictures and other objects had been prepared for the occasion, and a copy was presented to each guest as he ascended the main staircase;—in fact nothing that could add to the comfort of the guests was overlooked. The rooms were crowded up till midnight, and general satisfaction was evidenced on the part of all.

A NEW PLAN FOR CLEANSING THE CITY.

▲ Bishop of Choyne once made a suggestion:
To tell it on Cork-hill some feelings 't will hurt.
Its good, however, there's no one can question;
Let us try, then, at once "A Tax upon Dirt!"

PRINTER'S DEVIL.

IMPROVED ELECTRIC LIGHT.

WE have already given a notice of the improved electric light produced by the Gramme electric machine, but a fuller description will not be out of place in our pages. This light is now being used experimentally in the illumination of the clock-tower of the Houses of Parliament. On Monday last the Chief Commissioner gave permission for an examination of the arrangements, when a number of gentlemen at the invitation of Colonel Stuart Wortley availed themselves of the opportunity to inspect its working. At present the arrangements are only temporary, but should the light be adopted they will be somewhat modified in detail. The chief feature is the production of a continuous current by a rotary instead of a reciprocating action. This machine is placed in the vaults of the House of Commons, near to the boilers, and is worked by a small engine, which was already there, and was convenient for the purpose. From the machine two copper wires, half an inch diameter, are led along the vaults to the base of the Clock Tower, and thence upwards to the signalling point, a total length of nearly 900ft., being about three times the distance that an electric

current has ever before been conducted for a similar purpose. The signalling apparatus is placed in a lantern 5ft. high, 4ft. wide, and having a semicircular glazed front, which projects from the lantern of the belfry on the north side of the tower, or that overlooking the Victoria Embankment. It consists—first, of a fixed table, in which is inserted a flat brass ring 16in. diameter, and 1in. broad, which serves as a roller path for the apparatus carrying the lamp and reflector; next, there is a circular revolving table, having bearings on the roller path, and which is moved around a central pivot projecting from the fixed table, being actuated by a worm wheel and screw. By means of this arrangement the light can be directed horizontally from side to side through an arc of 180 deg. It could, of course, be made to sweep the whole of the horizon, but the position of the lantern with regard to the Clock Tower is such as to enable the light to be seen through the range of a semicircle only. Upon the revolving table, and hinged to it at the front is the elevating table, which has a screw adjustment to the rear by which the light can be raised or depressed, being capable of vertical training through an arc of 25 deg. On the elevator is placed the lamp table, upon which again is a sliding platform, on which the lamps themselves stand. There are two lamps, which are in use alternately, the carbon points lasting but four hours, while the House frequently sits for ten. The copper conductors terminate at the fixed part of the machine, and the method of carrying the current from them to the lamps is very ingenious, the moving parts of the apparatus forming in themselves conductors. The negative conductor is placed in metallic contact with one hinge of the elevator table through the centre pin on which the table revolves, and the positive conductor with the other hinge by means of the brass roller path. The currents from those points are conducted to the lamp table, and thence through the traversing platform to the lamps, metallic contact being obtained throughout the whole circuit by means of flat springs moving over flat surfaces. The changing of the lamps is effected, without any appreciable break of continuity in the light, by means of the traversing platform on which they stand, and which has a sliding motion from side to side. When the carbon points in one lamp are nearly consumed, the traverser is quickly shifted from right to left, or *vice versa*, as may be necessary. The break of contact is but momentary, and only exists during the time required to move the traverser rapidly through a space of six inches. The light will not become extinct during that period, as there is not sufficient time to allow the incandescence of the carbon to entirely subside. The springs under the lamp thrown out of use are by this action removed from the metal plate in the lamp table, and the springs under the fresh lamp are brought into contact, and the light is at once produced anew. The intensifying apparatus at present in use is a holophole lent by Messrs. Chance, and through which the rays are sent in parallel lines. It is 21 inches in diameter, and is composed of lenses, surrounded by annular prisms, the centre part refracting the rays and the outer rings reflecting them. Should the electric light be adopted, a special lens will be constructed, by means of which the rays will be diffused through an arc of 180 degrees, instead of being sent in one direction only. The detail arrangements for exhibiting this light were designed and carried out by Mr. Conrad W. Cooke, of the firm of Whieldon and Cooke, who are the manufacturers of the Gramme electric machines.

GRAVEYARDS IN TOWNS.—A movement is on foot in the town of Wexford to close up all graveyards therein, and to establish a cemetery in its vicinity. We understand that an early meeting of the corporate body will be held, at which an expression of the opinions of its members will be obtained on such an important matter.

TRIBUNALS OF COMMERCE.

A VERY useful movement is for some time afloat in London for the purpose of establishing Tribunals of Commerce, with courts of conciliation and arbitration. At a meeting held last week, convened by the Lord Mayor of London in accordance with a requisition, the matter was discussed at length by several speakers. From the summary of the chairman's speech (Alderman Cotton), which we give, the nature of the organisation sought to be established will be seen.

In the opinion of the chairman, the whole of the question was thrown upon the commercial men in consequence of the law's delay. It must be obvious that, if the number of our judges were increased, there would be much more expedition and much less costly law. They all knew the enormous discomfort and worry, with the sleepless nights, which came to a man when he was engaged in a lawsuit. They came to that Guildhall, and brought their witnesses and their books and their facts, and then, owing to a large number of causes on the list, they would find that their cause did not come on in that term. Then retaining fees had to be given to counsel, and a very large amount of loss and discomfort resulted from the delay. It had been thought that their meeting of that day was unnecessary, because the whole question had been referred to the Judicature Commission; but he thought it right that this meeting should be held, even if the Commission should take up the question, for this reason, that they might run correlative with it, and help it by their suggestions. Otherwise, if they waited till the Judicature Commission had collected their evidence and made their report, they would be all dead and gone long before any act was passed upon it. He thought that if a Tribunal of Commerce were established, it should be composed of such members as that their best commercial men should have confidence in it. As to its formation, he would suggest that it should be composed of something like forty-two members from the leading commercial centres. He would say seven members each from the Baltic Coffee-house, the Commercial Sale-rooms, Lloyd's, the Stock Exchange, seven bankers, and seven scientific men. They would thus have an elective body who would be the most efficient that could be obtained, and they could call in members outside from their own body if they were needed. He had shadowed forth a scheme in that way because he thought the prime difficulty with a Tribunal of Commerce was how it was to be formed. At present injustice was often done through cases being decided on legal points instead of on the actual justice of the case. Difficult cases were often referred to arbitration under the present system after all the expenses of a trial had been gone through; whereas, under the new system, they would be properly referred at once. He did not think that a single lawyer would object to the institution of Tribunals of Commerce, provided there was an appeal from them to some superior court. He believed that the present delays in the law were a source of as much discomfort to respectable attorneys as to their clients. They knew that in business it was the "nimble ninepence" that was better than the "slow shilling," and it was the same in the law. He would leave the subject in their hands, and whatever decision they came to, he, as chairman, would submit it to them.

Mr. F. Lyne, the chairman of the Tribunal of Commerce Association, proposed a resolution to the following effect:—"That in the opinion of this meeting it is of vital importance to the great mercantile interests of this country that Tribunals of Commerce, not costly in action, should be at once established on principles which would admit of properly-qualified commercial men being appointed to act as adjudicators to decide disputes according to trade customs and usages." He said they had seen all favoured interests in this

country give way to the public interest except the law. He was also of the opinion—and also, he said, capable of proving—that lawyers' power was demoralising to the country, and he considered their power was a refuge for the greatest rogues in the country!

Speaking of the formation of the court as indicated by the chairman, Mr. F. W. Campin said the suggestions were very good as far as they went, but why should they not call in the aid of the Livery Companies? He was of opinion, if those Livery Companies had been at work in accordance with the charters of their original foundation, there would be no necessity to ask for Tribunals of Commerce.

Mr. R. Attenborough related a remarkably complicated case, the settlement of which he had obtained in a short time, at a trifling expense, by the action of a Tribunal of Commerce at Hamburg. He indicated some practical difficulties that would have to be met in the constitution of a tribunal, which could, however, be all met in practice.

Sir John Bennet moved a resolution for the formation of a committee to carry out the objects. After speaking of the wealth of the country and the great amount that would be at stake in Tribunals of Commerce, the speaker took up the constitution of the court. He said they had in the city twenty-six wards, and it would be quite possible for each ward to have the right to nominate a certain number of members—say 150 altogether. From these each party in a trial might select two, and the four could choose one other as umpire. Those five would then form a court, to which any question could be referred. If he had a matter involving £1,000, he would rather go to those five men than to a court of law.

The establishment of a Tribunal of Commerce is a subject well worthy of deep consideration here as well as in London, but we are of opinion it will take time before men will be got to view it in the light that it should be viewed. Our merchants and traders, from the highest to the lowest, are too prone to avail themselves of the strong arm of the law, which often falls with crushing effect not only on the defeated party, but on the successful, who is ruined in contesting his just claims.

ON COLOUR.

In the hall of the Painters' Company, London, Mr. J. G. Crace a few days since delivered a lecture "On Colour," in furtherance of the movement among the guilds of London for the advancement of technical education. The Painters' Company, we believe, was the first body to make an effort a few years since to originate the movement, which has gradually been taken to by other companies. They commenced a series of exhibitions of painters' work, which was continued for four or five years, and prizes comprising gold and silver medals were awarded to the successful competitors.

At the recent lecture a large number of painters and decorators attended. The surroundings of the place were themselves a lecture on the subject, for the windows of Painters' Hall are for the most part filled in with stained glass, in beautifully bright colours, the walls are covered with paintings, and on this occasion were also hung with the numerous specimens used to illustrate the lecture. Mr. Deputy Heath took the chair, in the absence of the Worshipful Master, Mr. G. Trollope. There were also on the platform Mr. Deputy Sewell and Mr. Monner (treasurers), Mr. Naylor (Upper Warden), and Sir Morton Peto, Mr. Hale, Mr. Burford, and Mr. Dilworth (members of the Court of Assistants).

Mr. J. G. Crace said that before entering upon the subject of his lecture he could not but express his satisfaction, and that of the Court and Livery of the Painters' Company, at seeing their old hall filled by those who were so intimately connected with the trade

or craft which their ancient guild had represented for so long a period. He could confidently express their earnest desire to make the company the means of advancing a knowledge of their art. As they were perhaps aware, this company had extremely limited means. They were the distributors of about £2,500 yearly, which was left for, and was now paid to poor painters disabled by the sickness peculiar to their trade, and to other poor persons. He thought it was an honour to belong to such a company. He would be very much gratified if some means could be found to associate with it all those who hold any rank in the trade as clever workmen and upright men. Mr. Crace then proceeded to the delivery of his lecture, the subject of which, "Colour," was, he said, a most important element of their trade. The earlier part of the lecture treated of the distinction of colours into primary, secondary, and tertiary, with a sketch of the opinions of noted writers as to which of the prismatic colours should come under each denomination. The relations of these colours to each other was illustrated by numerous experiments, which, from the nature of the subject, can only be properly described in connection with the diagrams used. Some of these experiments were very striking, as, for instance, one which was to show that a colour may appear most widely different according to the colours with which they are placed in contact. It is obvious that it is of the utmost importance in choice of colour for decorative work to remember the principle, "Colours have no settled tone, but are what they are made to appear." In harmony of colour it was laid down that the three primary colours should appear in one shape or another. All harmonies should be modified agreeably. Thus blue and orange, or red and green, cannot be used without some colour between them to modulate them. Mr. Crace referred to the combinations found in flowers as examples of perfect harmony of colour, and applied the rules he laid down to the decoration of rooms, and the harmony to be preserved between wall, cornice, ceiling, and carpet. For the latter he recommended a deep, rich, retiring colour, as maroon or green, enlivened with a pattern in more cheerful colours. With regard to the doors of a room he did not proscribe graining, but he thought it was used far too frequently. Why not employ a good brown, maroon, or black, taking care to face up the work with a very smooth varnish? Above all other plans, though, he liked the real wood, for this, if well finished, would have a handsome effect. In staircases, imitation marbles had a very beautiful effect, especially as the art had been brought to a high pitch of perfection in this country; but he thought that good stenciling looked well, and was preferable to a sham. The use to which a room was to be employed should regulate the colours to be employed on it. If, for instance, a room was to have heavy pictures in it, green was a good colour with cinnamon for the windows and doors. For statues he was in favour of a decided colour, which should be red. But regard should be had to the condition of the marble. If it was old, the surrounding colour should be toned down to correspond with it. For prints or photographs the room should be a rich brown or leather colour, which gives lustre to the photograph. Speaking generally, it might be said that whatever colours had to be brought together, gold was the universal harmonizer which did equally well for all. In treating of the decoration of churches the lecturer said he was not surprised that architects should dread the indiscriminate use of colour. Decorators should remember the architectural effect of the construction of the building and try to emphasize it. At any rate he abominated mere white-wash, and could see no beauty in stone walls unrelieved by any colour whatever. The decorative arts among the Egyptians, Greeks, and Romans were then described, and illustrated by a number of beautiful specimens, the study of which, the lecturer said, would have a most salutary effect on English deco-

relative art. In conclusion, he said that the subject was so varied and extensive that it seemed impossible to do more than point out some of its most important features. Much would depend on the industry and intelligence of the individual workman. It was certain that those who absolutely studied to improve themselves, would be on the road of advancement, which, perseveringly followed, must lead to success. Many journeymen became masters, and there was, he thought, no trade which offers better openings for such results than theirs. He might say that nothing was denied to well-directed labour. Mr. Grace gave as an illustration of this, the fact that a now eminent artist, in whose company he was the other day, told him that 80 years ago he was at work in his (the speaker's) workshop as a journeyman. He was as surprised as he was delighted to hear this; and he honoured that artist for the success he had achieved. He would only tell all of them to study hard the principles of their art, and they would rank, as he believed their painters would, amongst the highest class of artisans in this great metropolis.

FIRE-RESISTING CONSTRUCTION.

THE following is a portion of the evidence given before the Committee (Society of Arts) by Mr. William Swanton, of the Metropolitan Salvage Corps:—

What structural arrangements the large warehouses does your observation suggest as the best for the prevention of the spread of fires?

I have never doubted the advantages of brick piers, groined brick arches, and concrete floors, as the best description of incombustible and fire-resisting construction for any building, especially those containing large bulks of produce and manufacture; still the space required for this kind of construction is such an objection that it is seldom met with except in vaults. The next best description of fire-proof construction is that where, though the floors are supported by iron columns, these columns are filled in with concrete, and surrounded by the same material and cement, to a thickness of about 6 in., so that the protection afforded to the iron prevents its being affected by the heat to so great an extent as it otherwise would be, and if the joists are of T-iron, ordinary hoop-iron taking the place of old-fashioned laths, the space between the joists being filled in with concrete, though timber flooring may cover the whole. This I consider a thoroughly good and incombustible mode of building, and one which would prove fire-resisting to a very great extent, even in ordinary private dwellings. If the spaces between the joists were filled in with concrete, say 6 in. thick, instead of shavings and sawdust, as is now generally to be found, very much protection would be provided, and it would not only prevent a building burning so rapidly as is now the case, but at the same time it would allow far more opportunity for the inmates to escape than now, owing to the rapidity with which a building burns when once on fire.

What do you consider the best materials for the construction of staircases?

The question as to what material staircases should be constructed of I have long since considered, and I cannot agree with many who approve of stone staircases, except for external purposes. Of course there are warehouses and other buildings where a massive stone staircase leads to landings in the centre of a block, on which are good iron doors leading to the various rooms or floors filled with goods, and perhaps occupied with workpeople, the entrance being from the street and ending at the roof. Nothing can be better than this kind of staircase, where it is perfectly independent of the floors and their contents, because the probability is that any of those floors might be burnt out and the staircase by no means affected by the heat on account of the protection afforded to it by the iron doors; at the same time I am strongly opposed to stone staircases under almost any other circumstances for internal purposes. And I fully believe that if the ordinary timber staircases, as at present constructed, were filled in with good concrete before the tread is fixed, they would form about the best and most fire and water resisting description of staircase that has at present been devised, and would, in my opinion, be the next best to brickwork itself. I know well how nice a good stone staircase looks, and is for use, when no fire happens, but I also know the fearful consequences of a nice-looking stone staircase suddenly giving way without any warning when

it is heated and water is thrown upon it in extinguishing a fire.

What do you consider the best materials for the construction of roofs?

The best description of roofs I can conceive are those covered in with stout slate, with about one inch of fine concrete between the laths and the slate. This would not only resist almost any fire from an adjoining building, but would, under most circumstances, withstand any use to which the roofs might be subjected by firemen and others.

What precautions do you recommend as respects the flues of furnaces?

I cannot conceive that any difference of opinion ought to exist as to heating furnaces, or the precautions necessary to avoid accidents by fire from them, so long as all timber is kept well clear of the heated parts, and properly-constructed flues only used. Furnaces are as safe as any other description of heating apparatus.

What precautions do you recommend as respects open fireplaces?

So far as open fireplaces are concerned there is no doubt that, with ordinary care nothing can be more safe, and accidental fires should not occur from anything in respect of them, so long as the hearthstones are not placed upon timber, and no such material is allowed within a reasonable distance of the fittings and flues; and no question ought to arise as to the advantage of open fireplaces in reference to ventilation over every other description of heating.

What precautions do you recommend as respects gas-lights?

Respecting gas and the risk of fire from its use, I have no doubt that it is the safest mode of lighting, so long as proper care and attention is given to it. Having every light safely fixed, and properly protected from contact with any inflammable article near it, and having every room in which it is used fitted with a ventilator into the flue of such room, there need not be any apprehension on that head.

What do you mean by concrete?

It may be made of many kinds of materials. What I refer to is that made with ordinary fine ballast and lime.

Would it not be better adapted to resist heat if made with clinkers, or things of that kind, which had been burned?

I am not so sure about that. It might be more binding, but I believe the small ballast I speak of would not be greatly affected by heat any more than that made of clinkers. It simply introduces the idea of using a new description of material we know little or nothing about, instead of using that which has been proved to answer the purpose so well.

What would be the effect of a great fire on concrete?

The effect of fire on concrete is scarcely perceptible in ordinary fires, especially where the ceilings and floors consist of this material, but in seriously large fires it would, under great heat, split into irregular forms, but not until being nearly red hot, and subject to the action of cold water being thrown upon it; even then the result cannot be compared to ordinary stone.

With regard to the construction of buildings, are there not some sandstones which will stand fire, and not split like granite?

I do not think buildings constructed entirely of granite would be specially susceptible of fire beyond those of any other stone. I consider stone in general exceedingly objectionable, and inclined to split when a fire occurs; almost any description you can name.

It is said that in Paris, where, during the Communique incendiarism, they had a good many fires, some of them, particularly that at the stables of the Omnibus Company, were stopped by asphalt. Is it a fact that there are two sorts of asphalt in use, the bituminous or inflammable, and one that is not inflammable—the Val de Travers?

I believe it is difficult to find any asphalt that is not somewhat inflammable; I know of none; but I think a great deal of the immunity from fire which Paris enjoys is due to their system of building, and many other arrangements we have not in London. They have no hydrants, but almost every soldier understands extinguishing fires, so that there the means of putting out a fire at once are far preferable to ours in London, without taking into account the services rendered by the military generally in respect to fires. Then, again, in the buildings they use iron "winches," filled in with concrete, so that every floor is comparatively fireproof. As a rule, in English buildings, as the work progresses, the space between the flooring and the joists is made a sort of dust-hole, or receptacle for shavings, sawdust, &c., arising from the work. Therefore, if once a fire happens, you have all the materials ready introduced and thoroughly prepared for a very rapid combustion.

Some time after the large fire at the City Flour Mills it was noticed that many of the iron joists

were still in their places, not twisted. Do you know whether they were filled in with concrete which had dropped out?

They were, I know, filled in with stone, not concrete. A great deal of the action of a fire upon iron materials of that kind depends upon the cubic contents of the building and the length of the iron in use; the shorter the iron the more likely is it to remain in its place without twisting. Had that building been divided into two, as it should have been, the action of the fire on the girders and rafters would have been very much less than has proved to be the result.

Do you place any reliance in the Extincteur?

It is better than nothing for extinguishing fires, when in order, but for my own part I would far rather have something I could always depend upon, say a hand pump. It seldom fails, and if there should be a flaw about it it can be seen at once. But with these Extincteurs, covered in as they are, you never know whether they are reliable or not till they are wanted, apart from the expense of re-charging. But I am told they are more reliable now than they were formerly.

Probably they may be efficient at first, but lose that efficiency by not being quite gas-tight?

Yes. They used to have a hole for re-charging at the top, and in the course of time, like a bottle of soda-water with a bad cork, the gas escaped. Since then they were turned upside down, and charged from below; of course then the liquid covered the tube, and, as a rule, I am told, they are now reliable.

Do you mean reliable soon after it has been charged, or two or three years after it has been purchased, and when a fire happens to occur?

I think it does not much matter, though I have no doubt the longer they are charged the less reliable they become. I have known some go to Australia and be sent back as perfectly useless. The whole secret, no doubt, was in the composition going wrong, no one being there at the time who knew how to re-charge it effectually.

So that, as a means of fire prevention, being required at the moment a fire occurs, the Extincteur may fail?

Yes; whereas the hand pump will seldom fail so long as water or any kind of liquor can be procured by which it can be supplied.

THE DUTIES OF MEDICAL OFFICERS OF HEALTH.

THE duties of Medical Officers of Health appointed under the Public Health Act are thus defined by the Local Government Board:—

He shall inform himself as far as practicable respecting all influences affecting or threatening to affect injuriously the public health within the district.

He shall inquire into and ascertain by such means as are at his disposal the causes, origin, and distribution of diseases within the district, and ascertain to what extent the same have depended on conditions capable of removal or mitigation.

He shall by inspection of the district, both systematically at certain periods, and at intervals as occasion may require, keep himself informed of the conditions injurious to health existing therein.

He shall be prepared to advise the Sanitary Authority on all matters affecting the health of the district, and on all sanitary points involved in the action of the Sanitary Authority, and in cases requiring it, he shall certify for the guidance of the Sanitary Authority, or of the Justices, as to any matter in respect of which the certificate of a medical officer of health or a medical practitioner is required as the basis or in aid of sanitary action.

He shall advise the Sanitary Authority on any question relating to health involved in the framing and subsequent working of such byelaws and regulations as they may have power to make.

On receiving information of the outbreak of any contagious, infectious, or epidemic disease of a dangerous character within the district, he shall visit the spot without delay, and inquire into the causes and circumstances of such outbreak, and advise the persons competent to act as to the measures which may appear to him to be required to prevent the extension of the disease, and, so far as he may be lawfully authorised, assist in the execution of the same.

On receiving information from the Inspector of nuisances that his intervention is required in consequence of the existence of any nuisance injurious to health or of any overcrowding in a house, he shall, as early as practicable, take such steps authorised by the statutes in that behalf as the circumstances of the case may justify and require.

In any case in which it may appear to him to be necessary or advisable, or in which he shall be so directed by the Sanitary Authority, he shall himself inspect and examine any animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, corn, bread, or flour, exposed for sale, or deposited for the purpose of sale or of preparation for sale, and intended for the food of man, which is deemed to be diseased, or unsound, or unwholesome, or unfit for the food of man; and if he finds that such animal or article is diseased, or unsound, or unwholesome, or unfit for the food of man, he shall give such directions as may be necessary for causing the same to be seized, taken, and carried away, in order to be dealt with by a justice, according to the provisions of the statutes applicable to the case. He shall perform all the duties imposed upon him by any byelaws and regulations of the Sanitary Authority, duly confirmed, in respect of any matter affecting the public health, and touching which they are authorised to frame byelaws and regulations.

He shall inquire into any offensive process of trade carried on within the district, and report on the appropriate means for the prevention of any nuisance or injury to health therefrom.

He shall attend at the office of the Sanitary Authority, or at some other appointed place, at such stated times as they may direct.

He shall from time to time report, in writing, to the Sanitary Authority his proceedings, and the measures which may require to be adopted for the improvement or protection of the public health in the district. He shall in like manner report with respect to the sickness and mortality within the district, so far as he has been enabled to ascertain the same.

He shall keep a book or books, to be provided by the Sanitary Authority, in which he shall make an entry of his visits, and notes of his observations and instructions thereon, and also the date and nature of applications made to him, the date and result of the action taken thereon, and of any action taken on previous reports, and shall produce such book or books, whenever required, to the Sanitary Authority.

He shall also prepare an annual report, to be made to the end of December in each year, comprising tabular statements of the sickness and mortality within the district, classified according to diseases, ages, and localities, and a summary of the action taken during the year for preventing the spread of disease. The report shall also contain an account of the proceedings in which he has taken part or advised under the Sanitary Acts, so far as such proceedings relate to conditions dangerous or injurious to health, and also an account of the supervision exercised by him, or on his advice, for sanitary purposes over places and houses that the Sanitary Authority has power to regulate, with the nature and results of any proceedings which may have been so required and taken in respect of the same during the year. It shall also record the action taken by him, or on his advice, during the year, in regard to offensive trades, bake-houses, and workshops.

He shall give immediate information to the Local Government Board of any outbreak of dangerous epidemic disease within the district, and shall transmit to the Board, on forms to be provided by them, a quarterly return of the sickness and deaths within the district, and also a copy of each annual and of any special report.

In matters not specifically provided for in this order, he shall observe and execute, so far as the circumstances of the district may require, the instructions of the Local Government Board on the duties of medical officers of health, and all the lawful orders and directions of the Sanitary Authority applicable to his office.

Whenever the Diseases Prevention Act of 1855 is in force within the district, he shall observe the directions and regulations issued under that Act by the Local Government Board, so far as the same relate to or concern his office.

Where more than one medical officer of health shall be appointed by a Sanitary Authority, such Authority, with the approval of the Local Government Board, may either assign to each of the officers a portion of the district, or may distribute the duties of medical officer of health amongst such officers.

THE MANUFACTURE OF GAS.

At a meeting of the Society of Arts a lecture was delivered by Mr. Thomas Wills, F.C.S., "On some Recent Processes for the Manufacture of Gas for Illuminating Purposes." The lecture was chiefly a consideration from a scientific point of view of the various schemes introduced to public notice under the several titles, "Patent Gas," "Air Gas," "New Gas," &c. The present system of the

manufacture of gas in the ordinary way from coal was shewn to be a far less satisfactory process, and it was stated that this, together with the increased price of coal and labour, had been the means of bringing about a favourable opportunity for the introduction of a better method. The circumstances under which it is possible to manufacture a gas for illuminating purposes were explained and illustrated, and it was further shewn that success, or want of success, in any particular process, was not a matter of chance or accident, but depended upon well-established physical and chemical laws, a point frequently overlooked in the claims and statements of inventors. The carburation of air or gas by means of light petroleum spirit, as proposed by the various "air-gas" companies, and by the promoters of the "new gas scheme," was gone into at some length, an endeavour being made to set at rest the vexed question, as to the permanency of such carburetted gas, by the calculation of the maximum quantity of vapour which can exist in air or gas at any particular temperature. The lecturer deprecated the tendency to throw an unreasonable amount of contempt on all such schemes, but regretted at the same time the number of exaggerated and untruthful statements sometimes put forward in favour of them. The lecture was experimentally illustrated, and a discussion took place at its close.

ARCHITECTURAL ASSOCIATION OF IRELAND.

An ordinary meeting of the above body was held at 212 Great Brunswick-street on Thursday evening. Mr. R. S. Swan in the chair. A paper on "House Drains, Chimneys, and Water Supply," was read by Mr. Charles Geoghegan, F.R.I.A.I. Mr. James Farrell was balloted for and elected a member of the association. On Saturday afternoon, 7th inst., the members will, by permission of Mr. Ashlin, visit the new Augustinian Church, John-street, at three o'clock.

THE "POWERS" THAT BE!

At the meeting on Wednesday of the Guardians of the North Dublin Union, Mr. Ledger Erson asked to bring before the board a case which he thought deserving of notice. On Sunday last the child of a poor widow, who resided in Off-lane, died, and she, being destitute and without the means of paying for its interment, came to him. He gave an order on the relieving officer for a coffin and shroud, but again the mother called, saying *she could not pay the graveyard fee, 3s. 6d.* He on Monday had the matter brought before the officials of the union, and they said they had *no authority to intervene*. Next he applied to the sanitary inspector, who likewise said *he was powerless*; and yesterday (Tuesday) he wrote to one of the divisional police magistrates, asking him to direct the removal of the body, on the ground that it had become a nuisance to the locality, but he, too, *declined to act*, shifting the responsibility on the *sanitary authorities*. At 11 o'clock that (Wednesday) morning he heard that matters remained as they were, the corpse being in the room inhabited by the poor widow and her family (oh!), a cause of sorrow to her—she being jeered at by the neighbours—and danger to the locality. Since that hour, he believed, the sanitary authorities had interfered (cries of "How? how?"). They entered the house, took possession of the body, and conveyed it to the Morgue, where it now lay. He brought these matters under the notice of the board, not by way of complaint against their officers, who were always ready and willing to do their duty, but that some remedy might be suggested to the *proper authorities*. The law left them powerless; let them use their endeavours to have the law amended. They constantly heard of complaints as to the overcrowding of their country graveyards; but could they expect otherwise than that poor people, unable to pay burial fees in town, would convey their dead to the rural districts and commit the bodies to the dust there at night, and without any preparation? On every ground—public decency, public weal, and public health—they ought to interpose in this matter.

Mr. Crawcour—It's lamentable; but won't the child be buried now?

Mr. Erson—I understand not. It may be kept at the Morgue for days.

Captain Brinkley thought that whoever removed the body was responsible for its interment.

The Chairman said that by the 29th and 30 Vic., cap. 90, any justice, under the circumstances of a case like that referred to, was empowered to issue an order for the interment of the child, said order to be carried out within a given time by the sanitary authorities. *The sanitary authorities of Off-lane* (that being within the city) *were the Corporation*. Had the case arisen in any of the rural districts of which they (that board) were the sanitary authorities, they would have at once provided for the interment.

After some further discussion the matter dropped, it being understood that the relieving officer would see to the interment of the body at once.

ANCIENT DUBLIN.

On Tuesday evening, the 13th ult., Mr. Andrew English delivered in the Theatre of the Mechanics' Institute, Lower Abbey-street, a very interesting and instructive lecture to the working classes on the above subject. The lecture was illustrated by enlarged drawings of the City of Dublin in 1610; Christ Church Cathedral, as it appeared two hundred years ago; the Tomb of St. Lawrence O'Toole; an Ancient Wooden House in Castle-street; a Mansion in Marrowbone-lane; the Ordnance map of the city at the present date. On this map the boundaries of the city in 1612 and 1728 were defined. This map we recognised as that prepared and exhibited by our energetic townsman in sanitary matters, Dr. Grimshaw, during the recent course of lectures on sanitary science in the Theatre of the Royal Dublin Society, and on which were so distinctly shewn the plague-spots of the metropolis.

Sir WILLIAM R. WILDE, M.R.I.A., presided on the occasion.

The lecturer, after a few prefatory remarks, stated that the subject on which he was about to treat was one that could not be exhausted in a single lecture; and, although it might be deemed presumption on his part to attempt it, he did so in the hope that those before him would grant him their kind indulgence, and that some of their fellow-citizens distinguished in that branch of Irish local history, would honour them on an early occasion by delivering other lectures on the history of their ancient metropolis. The lecturer gave, in their probable chronological order, the names by which Dublin was known at various epochs. "Eblana Civitas," the name given the city by Ptolemy, the Roman geographer, in A.D. 140; "Bally-ath-cliaith," the town of the ford of Hurdles; "Drum-choll-coil," i.e., the brow of the hazel wood; "Ath-cliaith Dub-lyn," the passage of the ford of hurdles across the black pool; and the Fingalian title "Divelin," or the Black Pool; but from long anterior to the English invasion no change in the name had taken place. The extent of the city in 1610 was from the south side of the Liffey to nigh the valley of the Coombe, and from where Cork-hill stood on the east to St. Francis-street or Thomas-street on the west, as these boundaries were then known. That territory was circumscribed by walls (of which traces still existed), in which were several gates. The lecturer pointed out their sites on the large map of 1610, prepared for the occasion. He enumerated the different buildings that existed in the city prior to the English invasion, and those erected by the conquerors. The special attention of the audience was held whilst the lecturer gave the history of the only round tower which Dublin possessed, and which stood in Ship-street, and was only taken down within the memory of men still living. It was attached to the Church of St. Michael le Pole, the graveyard only of which remained to this day. The lecturer here remarked on the destruction of many remnants of antiquity in this city, and contrasted with this vandalism the praiseworthy conduct of their chairman, whom he believed to be foremost in the conservation of Irish antiquities. The lecturer reminded his hearers that for a good portion of this subject he was indebted

to "The Annals of the Four Masters;" and as their respected chairman was then occupied in the good work of raising a monument to their memory, he trusted that his audience would display their gratitude as Irishmen by contributing to that great object. He stated that in 448 the King of Dublin was baptised at a well where St. Patrick's Cathedral now stands. That the saint, as they read in the Black Book of Christ Church, celebrated mass in one of the vaults over which Christ Church was, hundreds of years afterwards, built. He traced the history of Dublin from the invasion of the Danes, and stated their two-fold defeat by Brian Boru, and the Battle at Clontarf, "both sides being fully prepared;" and the final conquest of Dublin—Danes and Irish—by the Saxon invaders. Among the historic incidents connected with Dublin, he alluded to the coronation of Lambert Simnel in Christ Church, whither the mock king was carried on the shoulders of D'Arcy. The lecturer stated that the crown used on the occasion was taken from the head of the statue of the Virgin Mary that then stood in St. Mary's Abbey, but which at this day was placed near the high altar of the Carmelite Church, Whitefriar-street. The late Rev. Dr. Spratt had informed the lecturer that, hearing the silver crown was on sale at a silversmith's in Capel-street, he proceeded thither to purchase it, but was informed by the proprietor of the establishment that the crown had been just then melted in the crucible. Having given a description of many ancient city customs, Mr. English came to treat of modern Dublin. He begged of his hearers to contrast Dublin in 1610 with that of Dublin of their time; to look at Speed's map and its great Ordnance successor. He quoted the returns made by the earliest authorities, concluding with their chairman as chief commissioner of the census of 1871, and regretted that Dublin did not increase in extent or population in proportion to other cities; and, as the health of the people was a primary object, he hoped they would be afforded means of preserving such by those baths in existence being opened on Sundays, and by the conversion of the now unproductive city basins into swimming-baths. Next came the mental education of the people, for which purpose he advocated free libraries being established in the city of Dublin. They existed in Manchester, Liverpool, and in every large city and town where the municipality cared for the welfare of the people. The ratepayers would not grumble, but quite the reverse—they themselves being the principal participators in the good effects of such. And where could there be found a more suitable reading-room than the Round Room of the Mansion House? After some further observations about the bridges, the propriety of having on the southern side of our city an additional last resting-place, and a few other matters concerning cemeteries and other local improvements, the lecture was concluded.

A vote of thanks to the lecturer was passed with acclamation.

Sir William Wilde was moved from the chair, and Mr. Brogan was called thereto, and a vote of thanks passed to Sir William.

DUBLIN IRON MANUFACTURES.

In connection with this branch of trade we are happy to know that Messrs. Edmundson and Co., of Capel-street, are at present executing some large orders at their factory, Stafford Works, in this city. Amongst these are extensive gas works which they have to erect at St. Petersburg; gas works for Sir Richard Wallace at his residence, Sudbourne Hall, Suffolk; gas works for St. John's Point Lighthouse, for the Commissioners of Irish Lights; and a great variety of other manufactures in brass and iron. Messrs. Edmundson and Co. have been the means of still further developing

and extending Irish manufactures by means of Mr. Wigham's Patent Burners, now in use at many of our Lighthouses, and the extension of which to other Lighthouses in England and abroad is only a matter of time. Mr. Wigham's Burner has recently excited much attention in London, where it has been displayed as a signal light on the top of the Clock Tower of the House of Commons to indicate to members when the house is sitting. Some interesting trials have lately been made there between Mr. Wigham's burner and the electric light, which have, so far, been unmistakably in favor of Mr. Wigham's gas light, from its superior power of diffusiveness and facility of management.

We want more such work for this country as that in which Messrs. Edmundson are engaged, and it only requires industry and enterprise to increase it to an almost unlimited extent. We have good and clever workmen, quick in taking up ideas, and prompt in carrying them into practice. If some of the ability which is now displayed in political agitation were directed in carrying out works of industry such as we have now described, we think the necessity for continued political agitation would soon cease to exist, as the people would be too busy and contented to occupy themselves with mere politics.

TECHNICAL EDUCATION.

"COPPERPLATE ENGRAVING AND LITHOGRAPHY."

In the sixth and last lecture given at Stationers' Hall, London, Mr. E. A. Davidson treated of "Copperplate Engraving and Lithography." Mr. Davidson said that he had formerly alluded to metal engraving. It was not until 1440 copperplate engraving became a serious rival to wood. To the silversmiths of the middle ages engraving had long been known. For some time before the date above mentioned there was a kind of engraving used by the silversmiths for paxes and shrines, which was termed *niello* work, and was so called because, after the engraving had been executed, the depressions were filled with hard "black" shellac or sealing-wax, in a style similar to the door-plates of the present period. The silversmiths of the present day used a very different style, as their object was to make the silver as bright as possible, and, therefore, they worked with a polished tool. In engraving silver ware—say a dozen spoons—of one pattern, a man would not design each spoon singly; but, having designed one, he would fill the depressions with black grease and take reverse copies on paper, which he would rub on to other spoons for engraving the rest. Tomaso Finiguerra, whose work was celebrated through all Italy, had it suggested to him that through this mode pictures might be obtained, and he brought the suggestion into practice; which, taking hold of the artistic spirit of the age, soon produced an army of engravers, and made pictures popular, especially as many painters engraved their own works. Among these was Leonardo da Vinci, who is said to have engraved two pictures. In 1471 Albert Dürer was born. He was the son of a goldsmith at Nuremberg, and became one of the greatest painters, engravers, and architects ever known. Besides being a wood engraver, he developed the whole principle of copperplate engraving, and discovered etching on copper. In etching, the plates were first of all burnished, then heated, and rubbed over with a composition containing Brunswick black, afterwards smoked, a piece of red transfer-paper put on the plate, and then the original drawing. The drawing was gone over, line by line, with a hard pencil, or "style," which left a black surface on the plate, with red lines.

These red lines were traced with a needle fixed in a handle down to the copper; after which the plate was placed in acid, and the etching was ready for printing. About 1650, another style of engraving came up. It was said to have been invented by Prince Rupert, but was really discovered by a Prussian officer. This was called "mezzotint." To produce it a tool like a small cheese-cutter was worked all over the plate in sixty or seventy directions, and left it so thoroughly indented with close small dots, that, if printed from, it would look entirely black. At this point, however, the engraver began to scrape out the dots where the whites were to appear, and to burnish them, so that, where a perfect white was wanted, all the dots were scraped out, and, where half a shade was wanted, half the dots, and so, according to shade. "Stipple" engraving was done dot by dot, with a tool a little bent. Bartolozzi and his school were great stipple engravers. The work was sometimes deepened by acid. In "aquatint" the plate was bordered with wax, and was from time to time placed in acid, according to the depth of the tone wanted, each part, as finished, being protected from the acid. In printing from copperplates the ink was wiped off the surface, and the ink in the lines appeared in the impression; but quite recently a new method had been discovered of "fetching-up" the ink by means of a muslin cloth, which greatly enhanced the value of an engraving or etching. Lithography differed in toto from type or copperplate engraving. It was discovered by Aloys Senefelder, whose father was an actor, and came to Munich, where the son was placed with a lawyer, but, liking the stage, associated himself with some amateurs, for whom he wrote a piece, which took well, was printed, and brought him a small sum from the printer. To make more money out of future plays, he engraved them on copper; but, by scraping them down for more writing, they soon got too thin for use. He then took to stone, and engraved on them. One day, having no writing ink, he wrote some memoranda in printing ink on a stone. This suggested to him to eat the rest away with acid: but the acid went under the letters, and so they broke away. Then he covered his stone with gum, and wrote in grease on it, and took the gum away with acid, exposing the stone; and so the thought came that grease and water would not agree, and, if he wetted the stone where there was no grease, the ink would not touch it; and thus the true principle of lithography was discovered.

STEAM TRAMWAY CARS.

THE time has now come for the law to recognise the advance of mechanical science in the direction of steam street locomotion. The introduction of tramways is a great public benefit, but there is no doubt that with the present means of harnessing the horses, the want of efficient "points," and the small wheels adopted, the horses are worn out far more quickly than they ought to be. This defect would be remedied, and increased speed, greater control over car, diminished obstruction to other vehicles, would ensue, at a smaller cost, if some proper means of applying steam power were adopted. In Mr. Grantham's car, the engines, of eight horse power, cost about as much as the ordinary complement of horses, and can be worked at about half the cost. When the horses in America took cold and "struck work" a short time since, our clever cousins immediately adopted an engine to be worked by manual labour; this was an ingenious contrivance, but it would not have been necessitated had steam power been used. The giant "Steam" never strikes, and much inconvenience would be spared us if it could be universally adopted. Steam tramway cars are already in use in Madrid, and other foreign cities, their introduction into England would prove an inestimable boon.—*Iron.*

THE NEW COURTS OF JUSTICE, LONDON.

THE following letter, signed "Nemo," appeared in the *Times* of last Wednesday. The point to which the writer refers has not been unnoticed by professional men, but as attention has been again directed to it in the leading journal, it will be no harm to give it extended publicity:—

SIR,—The contract about to be entered into for the new courts is a matter of public interest, and I therefore ask leave to point out that your statement that Messrs. Bull and Sons are willing to contract to build them for £790,316 does not agree with the official statement published in March last, which put the figures at £719,787, there being a difference of about £70,000. I enclose the copy of a list from the *Builder* of March 29:—

The following tenders for building the New Law Courts were opened on Tuesday last, at 12 o'clock, at the office of Her Majesty's Commissioners of Works. The sums represent the totals on the tenders from the several builders who had been invited to compete:—

Lovatt ..	£1,000,000	Cockburn, Dublin	£846,790
Peto ..	928,500	Higgs ..	822,500
Briggs, Birmingham	871,242	Lucas ..	818,636
Lee ..	870,370	Baker ..	870,690
Braz ..	866,863	Jackson & Shaw	759,878
Browne & Robinson	861,930	Perry ..	759,000
Holland ..	861,243	Kirk, Woolwich	764,000
Trollope ..	859,313	Bull, Southampton	719,787
Dove ..	852,200		

Before accepting this or any other contract, the House of Commons ought to have an explanation of this difference, which may or may not be fair to other competitors. Surely all those who sent in sums under £790,000 have a right to ask for explanations. It is notorious that the Office of Works is at issue with the Treasury, and it is currently reported that the professional authorities do not agree among themselves, and that the architect is in the dilemma of possibly damaging his design. Then, again, it may be asked what artistic buildings of any magnitude have the Messrs. Bull executed? It would be satisfactory to the public to have this question asked and answered.

HOME AND FOREIGN NOTES.

CORK HARBOUR ENGINEER.—Mr. Philip Barry, of Cork, has been elected by the Harbour Board as successor to Sir John Benson, resigned. There were 38 candidates for the situation.

SMALL-POX.—We regret to learn that this fearful disease is playing sad havoc in the town of Mullingar. It is said that the first case was imported in the person of one who had travelled by rail thereto.

The election of a City Treasurer in place of Mr. Denis Costigan, resigned, takes place on Tuesday, 3rd inst. The outgoing officer is to receive a superannuation of £406 13s. 4d., being two-thirds of his late salary of £610—not a bad allowance to an octogenarian gentleman from a bankrupt city estate.

In pursuance to a motion of Mr. Dennehy, a committee of the whole house is appointed to inquire into and report on the duties, salaries, and hours of attendance in the discharge of their duties of all the officers of the Corporation. There is nothing said about the perquisites and other crumbs picked up by omission and commission.

The names of Messrs. Curtis and Sons, Strahan Brothers, and Messrs. Peter Jones and Son are added to the list of lead manufacturers authorised to supply water-pipes for conveying varry water into the houses. The Mining Company, however, seem to have obtained the profitable part of the business. As things are designed, so they generally turn out.

The *Journal of the Society of Arts* contains two important papers—"Indian Harbours," by Lieutenant-General Sir Arthur Cotton, R.E.; and "On some Recent Processes for the Manufacture of Gas for Illuminating Purposes," by T. Wills, F.C.S., with the discussions that took place in the Society on the reading of these papers.

SCREWS IN PLASTER.—It often becomes desirable to insert screws in plaster walls without attaching them to any woodwork; but when we turn them in the plaster gives way and our effort is vain. And yet a screw may be inserted in plaster so as to hold light pictures, &c., very firmly. The best plan is to enlarge the hole to about twice the diameter of the screw, fill it with plaster of Paris, such as is used for fastening the tops of lamps, &c., and led the screw in the soft plaster. When the plaster has set the screw will be held very strongly.

ARSENICAL POISONING.—Cases of arsenical poisoning from wall-paper have been frequently made public. A short time ago a priest died at Hinsdale, Massachusetts, under circumstances which indicate poisoning by arsenic, although it had been supposed that he was the victim of cancer in the stomach. It was ascertained that another person who had previously occupied the room where the priest died had also died with similar symptoms, and a third person had been made ill, but recovered on removal. On examination, the walls of the room were found to be tinted with Paris green, which, on analysis, showed the presence of arsenic in considerable quantities.

THE ALEXANDRA PALACE.—The grand organ in the centre transept is of gigantic proportions. It is constructed under the superintendence of Sir Michael Costa, by Mr. Henry Willis, the builder of the celebrated organ in St. George's Hall, at Liverpool, and of those in the Royal Albert Hall and St. Paul's Cathedral. It possesses five claviers, four for the hands and one for the feet. There are one hundred and one stops, eighty-seven of which are sounding stops. All the inventions of modern times have been introduced to render this instrument perfect, and the result is the attainment of a volume of sound, articulation of speech, imitative character, perfect quality of tone, and precision of action in its mechanism that has never until now been realised. The wind is supplied by two steam engines placed in the basement and remote from the organ itself. The instrument is governed by various contrivances for varying its powers and qualities of tone. Amongst these are the pneumatic pistons for the hands, each clavier possessing six. There is also a complete system of combination pedals, acting precisely as those in the grand organs recently erected in the Cathedral at Notre Dame and the Church of St. Sulpice at Paris; these are applied to the swell and great organs. The pedal organ contains four stops of 32 ft., three of which are open. The front elevation is designed by the builder, with architectural developments and details by the architects of the Alexandra Palace. The largest pipe in front is 40 ft. long and 2 ft. in diameter, and is the metal representative of CCCC.

AMERICAN SCIENCE.—From California we have a bit of news, which illustrates the wonders of photography. An artist there has invented a process by which a perfect portrait may be produced of a horse when moving with the greatest speed. In one of the experiments, the wheels of the sulky, in which the horse was driven, appeared as if they were still. From this region of wild experiments comes the information that a man, named Donaldson (of course they call him a "professor"), is making arrangements to visit England in a balloon during the coming summer. He expects to make the trip in seventeen hours. From the United States National Observatory, we learn that the largest refracting telescope in the world is about to be erected in that institution. The object-glass was made in the rough by Chance and Co., of Birmingham, but was ground and polished in this country; and the instrument is of good definition, and of 26 in. clear aperture. The total cost has been about 50,000 dollars.—*Athenaeum*.

TO CORRESPONDENTS.

THE VIENNA EXHIBITION.—There seems to have been a great want of foresight and organization in matters appertaining to this Exhibition. Only part of the British machinery will be at work at this date—a month after the opening. Notwithstanding the enormous proportions of the building, there is still a want of space for many exhibits. The Exhibition, as a whole, is a great one; but we fear, financially speaking, it will not be a success.

J. B.—Mr. O'Flanagan thanks his correspondent for his suggestions in re Gabby-street. He will remind the "Oldest Inhabitant" on his next visit to the neighbourhood.

ARTIZAN.—The demonstration takes place in Hyde Park, against the provisions of the Criminal Law Amendment Act, on (this) the 1st of the month.

VENTILATION.—If you do not want the roof water, add a length to the down pipe and let it into the drain. It will aid in the escape of the foul air and disagreeable smell that trouble you.

A POOR INVENTOR.—Do not be rash. If you offer your invention to the Corporation, do not fix a price, or else you will insult those high-minded worthies. The staff in the City Hall need all the "tin" they can save; and if your syphon is without the due percentage of "tin-alloy" to back it up, you will be bowed out.

R.H.A.—Was exhibited already in London more than once. The same "unfinished picture" has taken a long time to finish, like all great works of art, we suppose.

A STONE CARVER, BUT NO SCULPTOR.—It is modest on your part to say so. A tombstone can afford a field for the display of an artist's skill as well as an obelisk. With genius and love for one's profession, the roughest stone of the quarry can be made to unfold angelic and other forms. Creep on, friend, in the region of epiaphas, and you will yet stand in glory on pediments and parapets.

Some magazine and other notices are held over until our next.

"A VISIT TO EPPS'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Bulling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cocoa, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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Correspondents should send their names and addresses, not necessarily for publication.

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The Irish Builder.

VOL. XIV.—No. 324.

The Seven Scamps of Architecture.



JOHN Ruskin, who has written many wise and beautiful pictures on art subjects, and not a few foolish ones, produced a few years ago a very attractive work, entitled the "Seven Lamps of Architecture." Did he possess as much technical knowledge about handicraft in general as he apparently does about art, he might favour the world some day with a companion work, with the title that heads this article. We are not sure, however, that the magic number seven would fully include even the principal scamps of the building profession, in an operative sense. Probably eleven would come nearest to the number. The scamping builder is the employer-in-chief of the scamping class of workmen who build the

graves of our living population, and as part of that population pay the penalty which their workmanship assures. It is to the character of the material used, as well as to the character of the handicraft, that much of the evil from which the homes and the health of our people suffer, may be attributed. The work of scamping begins with the excavation at the foundations, and does not end with the painter, who gives his last finishing touch for the time to some delusive ornamentation in front.

These houses, which are built to kill as well as to sell, are a source of continual profit, after they are occupied, to small jobbing mechanics; the patchwork which they are subjected to is the inevitable consequence of their design and execution, and this patchwork must continue from year to year, while timber and brickwork hold together. The drainage is certain to be bad; from it arises the first seeds of ill-health; then creep on damp and dry-rot, on the walls and under the floors. Ventilation is found to be nowhere, though draughts are betimes everywhere. The rats and the dry-rot—or, perhaps a worse form of rot, and with a more offensive smell—will be found working hand in hand in the work of destruction, to the deep anxiety of the unfortunate tenant, and the great profit of the doctor and the jobbing builder, who must be called in, and who are sure to repeat their calls for several days. The first winter has scarcely passed over when the beautiful compo cornices, mouldings, and drops around windows and doors outside become frost-bitten, and fall asunder. The panels of the hall-door gape, the mouldings of which are planted, laugh in their mitres, and do it with such wide mouths that one is forced to stop them with a lump of

putty. The sashes rattle back and front, from basement to attic, with a vigour worthy of a better cause; but the sandbag man is on his rounds, and will drop in in the nick of time. Sandbags—particularly red ones—are very picturesque objects, placed lengthways along the meeting rails of the sashes. Where there are white curtains, and green Venetian blinds as a background, a red sandbag must stand out in such bold relief as to awaken the admiration of Ruskin himself.

The inner luxuries of new buildings are exquisite. The locks and fastenings, and window and door furniture in general, having changed their pearly pale or sable ebony colour in the dog-days, have now contracted pains; or, perhaps, that stage is passed, and more demonstrative symptoms have set in. The door-knobs, having got very loose in their habits, have dropped off altogether. The little screws have leaped from their spindles, cut their shanks, and abandoned their handles; and if you want to find them you must put on magnifying glasses, or grope the carpet, trusting to your sense of feeling. Alas, that our old race of builders' iron-mongers should have ever taken to earthenware and china knobs—but why should we spoil trade by decrying them? Ah, why? The sash fastenings are of a sample with the door furniture, and need no fuller character. The metal weights and sash hangings would be tolerable if the scamping builders and joiners hung them properly, and made the frames and sashes of the proper width, and used scantling of the right thickness. The staircase is of the latest improved step-ladder principle. Nicholson, and even Riddell, is superseded in the construction of the hand-rail. It is a triumph of constructive art. From newel post, or walking-stick scroll, to top landing, it winds on the eccentric principle. If there be a plan, rail, or twist scorns to stand over it, and shows its perfect independence in that respect. It is equally independent of the plumb-line of its balusters, which, however, cling to it, and hold its erratic movements a little in check. The stair itself apparently sleeps on springs like the body of a carriage, only its movements are not so gentle. In fact, the joinery of our model houses is all that any jobbing carpenter and scamping builder can desire. We do not wish to speak of the plumbing: that work is generally hid from vulgar eyes, and it is of such a character that it should not be exposed to the gaze of the vulgar. It is no harm to say that the lead has been sparingly used. The pipes are small in the bore, and the workman felt disinclined to hurt the material by fastening. Scamps, you see, are betimes tender-hearted to inanimate objects, for wise reasons. Remember also—oh, general public—that when the plumber's work has to be overhauled the carpenter must come to take up the boards and repair the breakage afterwards! The plasterer must come too, for some ornamental plaster has been broken. The painter must come, and if not the painter, the varnish polisher. In a word, when matters are once disturbed in houses that are built to sell, before the natural adjustment of things takes place the seven scamps of architecture must have a hand in the pie, or it will never be properly baked.

What are called the "jerry" class of builders would seem to be on the increase. We fear that the uprise of "Building Societies" encouraged this class of scamps to prosper, by affording facilities which were never in-

tended to be used in the manner now and for some years past observed. The scamping builder or "jerry" employer produced in bad times the "jerry" or scamping workman. Slop work, or slush work, was produced in quantity by a system of driving or overworking the unfortunate hands employed. Then piecework was adopted, or "so much for the job," and the building scamp and the working scamp became a recognised institution. Among the class of speculators we are speaking of, scamped work is performed in every branch; but in cheap run-up dwellings the active operative scamps are the mason, bricklayer, carpenter, joiner, plasterer, painter, and plumber. To the above may be added a number of supplemental scamps—smiths, iron and metal workers, and other workers, who have to do fixings, fittings, and finishings that are unfortunately never finished.

A badly-built house is a standing evil while it stands, and a nuisance to society. When built designedly in view of speculation with bad materials and bad workmen, and when the work is scamped, the speculator is a common robber. The builder and the speculator are sometimes distinct, though often they are the one party; but in either case they are worthy of each other, and deserve to be prosecuted under the Habitual Criminals Act as worse than ghouls, for they prey both upon the living and the dead.

So much for the present on Scamps of Modern Architecture.

THE SANITARY ASSOCIATION AND THE CONDITION OF THE CITY.

THE first annual meeting of the Dublin Sanitary Association has been eminently successful, and the Annual Report, slips of which are before us, is equally successful. The report as a document of sanitary labours, considering all the circumstances, would do any kindred association credit. We commend it to the attention of our readers and our citizens in general; they will profit by its perusal, as they will also by the proceedings of last Wednesday's meeting. It is a satisfaction to us to know that our journalistic advocacy in a sanitary direction has not been in vain, and that the charges that we have repeatedly made for years against our corporate authorities for not only their supineness, but absolute neglect, are fully confirmed by the report of the Sanitary Association. We say now, as we said a year ago, that the position that the Sanitary Association has had to assume is a grave and marked reflection upon the civic authorities of this city. The association has performed an amount of special labour that by right devolved upon the Corporation, who, to their discredit, allowed it to be performed without rendering any efficient assistance, and in numerous instances no assistance whatever. The sanitary condition of our city has been for many years deplorable, and has called forth strong denunciation not only at home, but on the part of our professional contemporaries in London. We trust that the speech of Mr. Purcell, Q.C., at Wednesday's meeting of the association will effect some good, and that the Public Health Committee of the Corporation, and the members of the Council in general, will pause at last and bethink them that it is useless for them to ignore any longer the disgraceful state of our city, for want of ordinary sanitary requirements. We have repeatedly pointed out the extravagant expenditure incurred by the Municipal Council in promoting and opposing bills in and out of parliament, and we have not been silent on the head of illegal payments. No wonder, indeed, that the Council, with the exception of a few members, threw all the obstacles they could in the way of a Government Audit when first announced.

Our belief in illegal payments is confirmed by the result of the Government Audit. If this audit was extended back for a period of ten years, what a revelation there would not be. The sum of £2,125, which is now disallowed, and which will have to be made good, was clearly misapplied. Had this sum been voted for sanitary purposes, it would have, in addition to the small sum expended in that direction by the Corporation, effected most beneficial results on the health of this city. But no, the hackneyed cry on Cork-hill was, "we have no funds," at the very moment that hundreds of pounds were being expended on abortive schemes, resulting in the increased taxation of this city.

We will return in our next issue to a review of the sanitary condition of this city, and the important report of the labours of the Dublin Sanitary Association.

THE CONFERENCE OF MECHANICS' INSTITUTES.

In the Science Theatre of the Mechanics' Institute of Saltaire, near Bradford, the annual conference of the Yorkshire Union was held. Mr. Baines, M.P., presided over the Conference, and among those present were Lord Lyttelton, Lord F. Cavendish, Sir A. Fairbairn, and Sir Titus Salt. From the annual report, which was read by the Secretary, it appeared that there were now 118 associated institutes in the Union, and that they contained about 80,000 members. In the libraries of those institutes there were upwards of 150,000 volumes. A village library had been established by the Union, which proved a great success, and 25 institutes had availed themselves of it. There was a penny bank also established, which progressed well. The number of students attending the evening classes of the various institutes had risen from 800 to 9,000. Financially speaking, the balance sheet showed that the Union was not only out of debt, but had something in hands. In the career of the Yorkshire Union, which has held together for thirty-six years, there is something to feel proud of, and its success ought to stimulate other institutes, not only in Great Britain but in Ireland, to exert themselves in like manner. It must not, however, be forgotten that the Bradford Institute is indebted to the bounty of Sir Titus Salt. The village of Saltaire was created by the Salt family, and all its buildings, streets, and institutions are more or less the upshoot of the philanthropic efforts of Sir Titus Salt and family. At the late Conference the delegates and visitors visited the Saltaire Park, and the works connected with Sir Titus Salt's alpaca works. There were about 184 delegates from the different mechanics' institutes in the county attended, and in the evening these, with a number of other guests were entertained at dinner in the gymnasium attached to the Mechanics' Institute. A number of papers were read at the Conference, and discussions followed on these. From the opening address of the Chairman we make room for the following portion:—

"Gentlemen, I give you a hearty welcome on the thirty-sixth anniversary of our Yorkshire Union of Mechanics' Institutes. I believe we have never met under more favourable circumstances, and without unduly magnifying the importance of our institutions I may say that they are every year becoming more indispensable, because they have every year to supply the wants of a larger population, to qualify for the carrying on of more numerous industries, to sustain more severe competition, and to adapt their members to the requirements of extended political and social duties and an advancing civilization. Every year we find our industries, which are the lifeblood of our great community, becoming less dependent on mere manual exertion, and more dependent on art and science, and at the same time these arts and sciences, which are our necessary auxiliaries, are themselves moving on, under the discoveries of our inventors and philosophers, at an accelerated speed, with new principles, new agents, and new applications, so that it is difficult to catch and keep up with our helpers, and to avoid being left behind in the world's wonderful race of progress. Mechanics' institutions began in 1824 with

small classes of chemistry, but the chemistry of that day was as little like the chemistry of the present as the bud is to the flower, or the egg to the eagle. They began when our tool-making machinery was so inferior to that of the present year that Sir Joseph Whitworth has told me, if I recollect right, that he received, when a lad, 20s. wages for planing with his chisel as many inches of an iron or steel table as could now be planed by machinery for a penny. They began when neighbouring countries were comparative strangers to each other, because railways were only just struggling into existence under the daring genius of George Stephenson; whereas now in the United Kingdom Kingdom hundreds of millions of passengers travel every year, and are impatient if they do not go faster than 30 miles an hour. New York shakes hands with San Francisco across the continent of America, and the Atlantic Ocean with the Pacific; Europe is traversed in every direction; the Alps and the Isthmus of Suez are virtually abolished; we have competing projects for railways to India through the wilds of Mesopotamia and the steppes of Tartary, and Japan has opened a line from Yokohama to Jeddo. When our institutions were first formed itinerant lecturers showed us the pretty experiment of electricity travelling round a room; now the lightning speaks in every tongue, and is stopped neither by mountains nor oceans, but brings Calcutta, Hong-Kong, and Melbourne within speaking distance of London, and enables the Liverpool merchant to send his orders for cotton to New York or Charleston, to use an American phrase, "in less than half no time." In other great manufacturing countries the advancement has been as remarkable as in England; in some it has been even more rapid. National and international exhibitions have enabled us to learn from all the world, and equally enable all the world to learn from us. The system of perfect free trade which we have wisely adopted, and on the whole with splendid success, has also the effect of leaving us open to competition at every point, and even with nations which slowly copy our example in commercial freedom. It results, then, that the manufacturing industry of England is bound to keep pace, not only with the advancement of the arts and sciences of which it must avail itself, but also with the progress of all mankind. We work in glass houses, with sharp eyes upon us; and the necessary inference which comes home to us in this, that the education of our manufacturers and artisans in art and science must advance at least as fast as the demand for it. The penalty of our failure in this respect would be the decline of our industry and the decay of our population. I have no fear of such a catastrophe; but the only reason why I do not fear it is, that we have our eyes open, and that every class, from the working man in the mill, in the foundry, and at the dye vat, to the prince and the peer, sees the necessity of improving our education in every branch. The social necessity for improvement is at least as great as the industrial, inasmuch as the working classes have obtained a powerful influence over our national, municipal, and educational institutions; and the whole country is interested in their using that influence wisely. Every man of you will echo the sentiment when I say that our first object in these institutions is to give the working classes that power which knowledge alone can impart and guide; and for this end, whether we belong to the richer or the poorer sections of the people, we throw our doors wide open to the humblest, and inscribe over the portals, 'Come in and welcome.'

At the evening sitting Lord Lyttelton spoke at length on the usefulness of these institutes, remarking that:—

"In speaking of a great union like this it was to be assumed that the objects for which it existed were useful and good, and be so fully believed in the usefulness and advantages of mechanics' institutions that he desired to see them spread throughout the country. The institutions which formed the union were attempts to meet and counteract the evils of isolation, and to turn to account the natural gregariousness of human beings for good objects. They illustrated the apologue that 'Union is strength,' and the fable of the old man with the bundle of sticks. They were none of them disposed to doubt the soundness and advantage of the principle upon which mechanics' institutes were founded. They were formed for the intellectual advancement of their members, but though that phrase was very comprehensive it was by no means all comprehensive. Though intellectual welfare never could include all that was needful for the good of mankind, yet it ought to harmonise with everything that was needed to promote the advancement of man in every respect. They could speak of the advancement and progress of mankind under many heads—material, intellectual, social, and religious; and it ought to be the case that whatever promoted any one of

these ought to promote all the rest, but never in our imperfect state could that be entirely the case. A man's mental condition might be improved without any advancement in his material or social condition, and even if he were improved physically, socially, and intellectually, his moral condition and his religious well-being—the most important of all points—might remain altogether unadvanced. The object of such institutions as were contained in this union ought to be to strive more and more for the harmonious action of all these parts of the nature of man. Among other schemes which had been set on foot for the educational advancement of the people was one which had been mentioned in the discussion which took place during the conference this afternoon. He referred to the proposal in which Professor Stuart had taken such an active interest, to extend the usefulness of the universities of the country by appointing university professors and teachers to give lessons and lectures, not in Oxford or Cambridge, but in various parts of the country. In connection with that subject he might refer to the Royal commission which had been appointed to ascertain the actual revenues of the university colleges of Oxford and Cambridge. His son-in-law, Lord Frederick Cavendish, was a member of that commission, and he called upon him, in the discharge of his filial duties, to pay every attention to the recommendations he was about to make. The subject of university diffusion, as it was originally called, was first started by Mr. Henry Sewell, in a pamphlet written 30 years ago, but that pamphlet fell dead on the country, for it came before its time, and was previous to those great measures of university reform with which the country had been familiar for the last twenty years. One point in which the universities might be reformed would be by providing that the holder of the fellowship of a college should only retain his fellowship on condition of undertaking the proposed teaching and lecturing in different towns, to the great and obvious benefit of such institutions as were connected with this union. He should be greatly disappointed if the result of the Royal commission to which he had referred did not effect some greater improvement in the college fellowships at Trinity College, Cambridge. There were no less than 60 fellowships, and when he was a student at Cambridge every man who held one of those fellowships was at perfect liberty to leave every comfort during the whole of his life upon the proceeds of that office without doing one single thing to promote the advancement of learning. He would suggest that the college fellowships might be employed for the future according to the following fourfold division:—In the first place a man should enjoy his fellowship all his life if he remained at the university, and took part in its teaching; in the second place, as there were some men capable of conferring the highest benefits by literary investigation and study, but who yet had not the gift of direct teaching, such men should retain their fellowships by satisfying a competent authority that they intended to employ their leisure and the resources of their office in some department of literary study and researches, the result of which employment should be made public hereafter, to contribute to the advancement of knowledge. In the third place those young men who had exhibited such high attainments as to secure special fellowships, but who did not intend to devote themselves to teaching, should only retain their fellowships for a limited time—say 10 or 15 years, which would give them a start in life, without providing for them their whole lifetime. In the fourth and last place, a portion of the university revenues should be devoted to the payment of professors, lecturers, and teachers, who shall carry the instruction offered by the universities to all parts of the country. These points bore very directly on the object of this great union. The noble lord, in conclusion, pointed out that it was rather to be feared that the great prosperity of the country had hardly encouraged the advancement of knowledge among the working classes of the country. How many more of them were there now than formerly who took pleasure in reading Shakespeare or Milton, or studying scientific subjects? If there were no more, what was the real use of such good times, and such great prosperity, seeing that the revenue of the country had been increased, by means of which all were ashamed, and that our increased prosperity was largely owing to an increased amount of vice? He trusted, however, that such institutions as this, which had already done so much good work, would go on with increasing benefit to the tutors, and that the future would show how much advantage the nation at large had reaped from them."

The observations of Lord Lyttelton are deserving of every attention on the part of the directors and members generally of our Mechanics' Institutes.

THE ROYAL IRISH ACADEMY.

At a general meeting of the members of the academy, held on Monday evening, 9th inst., the Rev. Professor JELLET in the chair, a paper was read by Dr. M'Alister on the "Anatomy of the Gorilla," of the "Baby Hippopotamus," and of the "Civet."

Mr. G. H. Kinahan exhibited specimen casts, taken on pasteboard, of inscriptions found on stones in the County Mayo.

Sir W. R. Wilde exhibited a finely-carved stone from the Glendalough ruins, supposed to represent the figure of St. Kevin. He expressed a desire also that the academy would, if the Government would not, make an effort to preserve these interesting ruins from falling entirely away.

THE MECHANICAL STOKER.

THIS machine, which supplies a desideratum, is being extensively adopted throughout England and Wales, and in Scotland. The town of Belfast, which, if not beforehand, is seldom behind in introducing useful inventions, has availed itself in the persons of Messrs. Neil and Brett in introducing and working the machine. If the Mechanical Stoker only fulfilled half of the conditions with which it seems to be fairly credited, it would be a great improvement in stoking operations, and consequently a saving. Messrs. Dillwyn Smith, of Liverpool, the patentees, guarantee their machine to possess the following advantages:—

"It increases the generation of steam from a given boiler space to the extent of twenty per cent. as compared with hand firing. It saves not less than ten per cent. in the consumption of fuel when the same quantity is used as in hand firing; while the manner in which it throws the fuel on the fire causes ordinary slack to be as efficacious in raising steam as good coal when applied by hand. It entirely does away with the smoke nuisance. It saves the injury to the boiler which is caused by the constant contraction and expansion of the plates resulting from the frequent opening of the door in hand firing. It secures a great reduction in the temperature of the stoke hole. It can be erected on any boiler during a stoppage of a few hours. It is so constructed and fitted to the boiler as not to interfere with hand firing—an advantage which those who have used other mechanical stokers will fully appreciate. Its cost is much less than that of any other mechanical stoker. It can be kept in repair at a very trifling expense. All the working parts are external to the furnace, and are not liable to injury by the heat of the fire. The power required to drive it is very little."

In addition, the fire doors are so constructed that the requisite amount of air, and no more, is admitted. An efficient arrangement is also effected by "moveable fire bars" to enable the stoker to keep his fires clear.

At a trial of Smith's Stoker at Messrs. Field's, Lambeth Marsh, London, the result proved very satisfactory, and is testified by responsible examiners. Various experiments have been made with slack and coal from the same mine, and when the difference has only been 2s. in the price there was a saving of 17 per cent. In a trial with coal stoked by hand on rocking bars same as used with the Mechanical Stoker on No. 2 boiler, interesting results were shown. According to both trials at Messrs. Field's, the first in which slack was used, and the latter in which Welch coal was used, the results shew a saving of 22-78 per cent. with regard to the cost of fuel by using slack with the Mechanical Stoker. This is a great consideration at present, viewing the present scarcity of fuel, and its high price whenever obtainable. The economical use of fuel is becoming justly a most important question, for on it depends the success or the non-success of our most important manufacturing industries. An efficient control and supply of air is necessary to combustion, and without an efficient control there must be excessive waste. Mr. Wye Williams, in his treatise on "The Economical Use of Fuel and Prevention of Smoke," writes wisely, when he says—"Until the supply of fuel and the quantity of the bars be regulated, it will be impossible to control

the admission of air." The Mechanical Stoker is as yet the only machine that fulfils these conditions. On its intrinsic merits alone as an invention it is worthy of commendation, but for its practical saving qualities it is entitled to an extensive adoption. It must be an acquisition in chemical works, soap works, pumping stations, cotton mills, paper mills, builders' and shipbuilders' firms, and engineering works in general. Until a better machine takes its place, we hope to see it largely introduced into this country now that a beginning has been made, and the Mechanical Stoker has proved a great saving wherever tried. Any further details connected with this patent may be obtained at our office.

LAND DRAINAGE AND CANAL TRAFFIC.

ROYAL DUBLIN SOCIETY.

At a "supplemental" Scientific Meeting, to be held on Monday evening, J. G. V. Porter, Esq., will read a Paper "On the Drainage of Lough Erne, and its Connexion with its Local Navigation, and the Canals from Belfast and Newry through thirteen counties to Limerick. Also on the best practical means of bringing the whole Northern Irish Canal System and immense Motive Powers of the Shannon and Lough Erne into active usefulness." The subject is an all-important one, and will doubtless be ably handled by the lecturer.

CORRESPONDENCE.

QUERIES.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Please state, for the good of public bodies, in your next publication, the number of cubic feet that ought to be provided for each person (having due regard to the health of the members) in the building of a public room in which from thirty to forty persons assemble, and remain three or four hours; also the best plan for ventilating the room in warm weather.—Yours, HIDUGON.

4th June, 1873.

[Without intending to be discourteous to our correspondent, we must say we have an objection to stating anything "for the good of public bodies," who are supposed to be able to employ a professional man. There can be no difficulty in ascertaining the size of a public room capable of seating thirty or forty, or even one hundred persons, though we would hardly call a room capable of containing thirty or forty persons a public room in the ordinary sense of a place for public meetings. Is the room in question to be a room in connection with another building, or a structure to stand apart? These are questions we would like to ask before speaking of the modes of ventilation that it would be advisable to adopt. Systems of ventilation are various, and are part and parcel of warming and lighting. In the meantime we would advise our correspondent to procure the cheap and practical treatises upon the subject in "Weale's Rudimentary Series," published by Messrs. Lockwood and Co., Stationers' hall-court, London. Very excellent hints upon the subject of ventilation and other cognate matters will be found in a book recently published by Murray, Albemarle-street, London. The author is Mr. Gervas Wheeler, architect, and the book is entitled, "The Choice of a Dwelling." It is a practical handbook of useful information on building matters. Finally, the best advice we can give for the good of public bodies and private individuals who are in doubt is, to consult a respectable architect.—Ed. I. B.]

REGULAR BODIES.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—A notice appears in a morning journal of this date from the Regular Body of Carpenters, addressed to the Regular Builders of the City of Dublin, viz.—"That on and after 9th June the

wages shall be 5s. 8d. per day," signed by Michael Loughman and William Walsh, who, it would be assumed, as appended, are *Regular Chairman and Regular Secretary to the Regular Body*. By this notice it is evident that the *Regular Carpenters regulate the Regular Builders*. Some explanation by one who knows any distinction, and what is the difference (if any) between a *Regular Builder* and a *Regular Bodied Carpenter* and ordinary men who toil in both capacities; and perhaps it would be some information to state if there be a *Regular Surveyor* and a *Regular Architect* alive.—Yours truly, PROXYLYMITE.

Dublin, 9th June, 1873.

THE ROYAL DUBLIN SOCIETY.

At a stated general meeting of the Society held last week, Sir George F. Hodson, Bart., Vice-President, in the Chair, the report of the Council was read. Among other matters detailed, it was stated:—

"The annual spring show of breeding and fat cattle, swine, poultry, and implements, was held on the 15th April, and three following days, and was remarkable not only for an increase in the number of short-horned cattle, but for an observable improvement in their average quality beyond any previous show held by the Society. Poultry and pigeons formed an interesting feature of the show. The display of agricultural implements and machinery reflected the character and eminence of the exhibitors, and proved a recognition of the prevailing necessity for their manufacture and exhibition to meet the advancing requirements of the country. The show of portable and fixed steam engines was considerable. The adjudications were accepted by the exhibitors without an objection. The committee allude to the visit of the Lord Lieutenant and Lady Spencer to the show, and express their grateful sense of the interest usually taken by their Excellencies in the exhibitions of the Society. The report also refers to the valuable assistance afforded by the veterinary department of the Irish Privy Council office under the guidance of the Director-General, Mr. Ferguson, H.M.V.S., and the immunity from disease resulting from the precautions adopted. The committee earnestly impress upon the Council and the Society the absolute necessity of obtaining enlarged space to enable them to respond to the growing desire of exhibitors, to supplement the exertions of the Committee by the increased amount and value of their exhibits. Since the stated meeting of the Society in March last, the attention of the committee has been continued on the subject of the Irish cattle transit with reference to the contagious diseases of animals. The committee having received a large number of answers to the queries issued by them on the subject, framed the report which is printed in the minutes of the Council of the 20th of March last. The number of analyses performed during the year was 197, and during the previous year 79. The work performed during the past year, therefore, shows an increase of 118 analyses. The most remarkable increase is in the number of artificial manures, feeding cakes, and soils submitted for examination. Dr. Reynolds states that during the past year he has met with but few samples of grossly adulterated manures, though articles of inferior value are comparatively common. The series of afternoon scientific lectures on subjects connected with Public Health, announced at the last stated meeting, has been completed. In conclusion the Council are much gratified in referring to the accession during the past year of a considerable number of new members, and to the activity and efficiency of the Society in its several branches."

It was resolved—"That the marked thanks of the Society be returned to those gentlemen who so ably delivered the recent series of Afternoon Scientific Lectures." It was also resolved—"That the best thanks of the Society be returned to those gentlemen who acted as judges at the late Spring Cattle Show of the Society."

LOCAL BOARDS AND THEIR SURVEYORS.—

The local board of Darwen, in Lancashire, having in their Highway Committee's report made some statements reflecting upon their surveyor, he threatened legal proceedings if the report was published. The matter related to the bad repairing of the streets, and to the dealings with the contractors. The board finally passed an amended report, in which the objectionable phrases were omitted. The surveyor stigmatised the charges made "were of a scandalous and malicious nature." A resolution to advertise for a new surveyor was come to.

THE MAUSOLEUM OF NAPOLEON III.

THE foundation-stone of the new chapel to be erected at Chiselhurst was laid on Saturday by the Empress, in the presence of nearly one hundred persons. The new structure will adjoin the present Catholic chapel. Among those who attended along with the Prince Imperial and his mother were Count Clary, Baron Courvisart, Madame Conneau and son, M. Filon (tutor to the Prince), and M. Pietri. The Rev. J. Goddard of the Catholic chapel officiated. The Empress, who had been presented with a silver trowel and small black mallet, inscribed with the Imperial initials, proceeded with the work of laying. A bottle containing a parchment, bearing a Latin inscription denoting the purpose for which the stone was laid, and also gold and silver and bronze coins of France and England were deposited. The chapel will be in the Gothic style, and will be built of Bath stone. On the western side there will be an altar, and in the centre of this a sarcophagus, in which the Emperor's remains will be placed, and which is the gift of the Queen. The dimensions of the intended building will be 24 feet in length by 12 in width, and the cost will be defrayed by the Empress. The architect is Mr. Clutton of New Burlington-street (who, we believe, is a nephew of Archbishop Manning), and the contractor of the work the well-known building firm of Messrs. Brass. Her Majesty not long since paid a visit to the site of the present monument.

LOST.

LOST, somewhere in "Dirty Lane," the exact date unknown, a testimonial of character, signed by the Vestry of Ballyragget. Whoever sends it to Slobland House, Stepside, to the care of Mr. Blank, District Surveyor, will be fairly rewarded.

Lost, the preamble of a gas bill (first draught). It was tied up along with two morning papers of the date, and marked with the initials "J. B." It is of no earthly use to any person save the owner. The finder—poor or rich—will be liberally paid for his trouble, and no questions asked. Address "X. Y. Z.," "Star and Garter."

Lost, at Radley's Hotel (it is supposed), an official envelope with the Westminster postmark. The intrinsic value of the thing is nil, but it is material as a matter of evidence that the letter was delivered in this city on a certain date. The handwriting is in bold character. If found, to be left with the hall-porter, City Hall, who is instructed to act accordingly.

Lost, two resolutions draughted in red ink, intended to be proposed at a late special meeting on a public improvement question. Rough copies were retained, but the wording of the lost document was somewhat more precise than those submitted. Possession is now sought, as a question of priority is at issue. Any one having possession of the red ink copy will hear of something to his advantage by calling on Mr. Organ, solicitor, Liffey Chambers, Temple Bar.

Lost, between the Exhibition Palace and Sackville-street, a bundle of notes. Their circulation is suspended in consequence. The finder, by leaving them with the publisher, *Journal* office, Princes-street, will be most liberally treated with. N.B.—The notes were in shorthand, and are taken by a new system, which is not understood by any person but the writer.

Lost, pencil sketches of a culvert in perspective, a syphon designed to pass under a tidal river, and a pumping machine intended to be worked by the tidal currents. Whoever sends them to Mark Revel, Town Surveyor, at his office, will receive five shillings reward.

Lost, an order to an eminent manufacturer from a public board. Whoever secures it for the advertiser will receive a liberal commission, or a quantity of tin-alloy if he prefers it. Address, "Messrs. Hookhim, Nailhim, and Clinkhim," Custom House Wharf.

Lost, or Stolen, a file of vouchers, by a messenger, between the Ulster Chambers and the Collector-General's office. Entries of some have been made, but others will be required at the next Government audit. The finder may rely on the strictest secrecy. Address "Acting-Secretary," No. 2 Committee.

Lost, several other papers of a public character. Any intelligent finder or "thief" (pardon the word) will know where they belonged to. By restoring them any day between eleven and three, the natural adjustment of things will take place.

L A W.

LIABILITIES OF MEMBERS OF CHURCH-BUILDING COMMITTEES.

A RATHER singular case of disputed liability in respect of church-building has been heard in the Court of Common Pleas, London. It was an appeal case, the action being brought by Mr. Whillier, a builder, against Mr. E. W. Roberts, and others. Mr. Roberts was a member of a committee for building Christ Church, Lower Clapton. The case was tried before Mr. Justice Keating, when a verdict was found for plaintiff, with leave to defendant to move to enter a verdict if the court should be of opinion that there was no evidence of his liability to go to a jury; and a rule was obtained. It appeared that Mr. Roberts attended a meeting of the committee on the 26th November, 1869, when it was agreed to accept the architect's plans if a tender could be got at a price not exceeding by 10 per cent. his estimates. The committee subsequently entered into a contract with plaintiff for the building, but defendant was not present at any meeting of the committee after the 26th of November. It was now sought to make defendant liable for a share of the expenses incurred. The court made the rule absolute to enter the verdict for the defendant, on the ground that he had not, either expressly, or by holding out, or by ratifications authorised the other members of the committee to pledge his personal credit.

TRADES GUILD OF LEARNING.

IN a former issue we gave some account of this movement, by which it is proposed to promote the furtherance of technical education, by the formation of practical classes of instruction in various trades, by the means of classes, lectures, examinations, &c.

A conference will take place on Saturday, the 14th, at the Society of Arts, for the purpose of formally establishing this Guild, and determining its constitution. Mr. Morley, M.P., will take the chair in the morning, and in the afternoon Mr. Mundella, M.P.

Now in respect to technical education, we have preached the object for years, knowing its value from early experience in practice; but in our opinion no amount of preaching will lift the movement up, and make it a success, without a systematic organization, well thought out, well begun, and well carried out. Beginning a thing well is nearly half the work, or, at least, it affords a fair promise of success. The City Companies of London, instead of being auxiliaries, ought to be the real movers of such a scheme. The workmen of the English metropolis have no lack of patrons at present, and no lack of facilities for obtaining knowledge and instruction. We fear there are too many volunteer cooks springing up, and that the broth may be spoiled before the food is spread. A greater spirit of earnestness is also required on the part of the workmen themselves.

They do not rally in sufficient numbers when really useful organizations in their favour are set in motion. Recreation and amusement too often monopolise their spare time. Foresight is not exercised enough by the young workman until too late, and an increase of years and family cares render it impossible for him to avail himself of facilities that existed, and shall exist for his brethren.

We wish the cause of technical education every success; and we hope the "Trades Guild of Learning" will succeed, believing the objects to be good, and necessary to be accomplished in the interest of art and handicraft.

THE IRISH [LONDON] SOCIETY.

Now that a great change is on the eve of its commencement in regard to the property of the Irish Society, which is likely very soon to change hands, matters about this society ought to be interesting, to some of our northern readers at least. The true history of the Irish Society is a work much to be desired, and the sooner it is commenced the better. It is in portion a very important chapter of our modern history since the days of Elizabeth and James I. The necessary documents and materials are not to be found in this country, but in the Guildhall of London. On another occasion we may supply a short chapter about the origin and career of the Irish Society, and the votes of money made from time to time by the London City Companies for effecting the Plantation of Ulster.

A general statement of moneys received on account of the Irish Society, from the 2nd day of February, 1872, to the 11th day of February, 1873, shows that the receipts have, with a balance from last year of £2,674 13s. 2d., been £19,113 0s. 6½d.; Derry and Liberties are credited with £6,410 2s. 1d.; Coleraine, £1,972 5s. 5d.; Culmore Fort and Lands, &c., are £881 12s. 4d.; (abatements to tenants have been made to the extent of £419 19s. 2d.); for fisheries on account of rent 1872, there was a balance of £3,953 13s. 2d.; amount received on account of rent of part of Lough Foyle Slobs, part of 1871 and 1872, 1872; quit-rents from the Grocers' Company, one year to 25th March, 1872, £21 6s. 8d.; ditto from the Ironmongers' Company, one year to 20th March, 1872, £11 6s. 8d.; ditto from the Skinners' Company, one year to 25th March, 1872, £16 18s.; loan, £1,500; septennial fines and fees on perpetuity leases, due 29th September, 1872, £755 3s. 1d.; fee-farm grant account, £18 19s. 1½d.; law costs recovered, £500. The expenditure, chiefly on schools, reached the income less £821 17s. 0½d., which is carried forward as a balance.

MEMORIALS OF OLD ESSEX BRIDGE.

[Being Extracts, with Notes, from the Diary of George Sample, Architect.]

IN the prosecution of his work, Sample seems to have taken every precaution against accident, and in the account he published of his operations he was equally particular in explaining all his plans from beginning to end. Every stage of the work of the re-building of Essex Bridge is fully described by letterpress and illustrations (copper-plates). By our architect's scheme in substituting five arches for seven, the water-way gained was 29 feet 6 inches, and consequently there was less pressure against the piers or structure as a whole.

PLANS, INCIDENTS, AND PREPARATIONS.

"In my designing this bridge I conceived that it was absolutely necessary to depart from one rule laid down by L. B. Alberti, viz.—'that the bridge must be as broad as the street that leads to it.' Now the street leading to the south side was but twenty-seven feet broad, including the projection of the pallsades, and, considering the great increase of the City, I thought that it should

not be less than fifty-one feet from out to out. Westminster Bridge [the old] is but forty-four, but the Pont Royal, Paris, is fifty-two feet broad, and this led me to think of forming a plan to get a street opened in a direct line of fifty-one broad from the bridge to the Castle, answerable to the breadth of the bridge, which would then be conformable to Alberti's rule. And so having got all my plans adjusted to the utmost of my abilities, on the 20th of May, 1752, I set off again to London, under these three strong inducements—1st, to find out the methods which were at that time in agitation for opening the streets of London and Westminster. 2nd. And principally to consult my friends, and to procure advice concerning my intended inclosure for laying the foundations; and 3rdly, to procure several materials which I knew I should want."

[The new street was subsequently opened to the Castle. In the opening up of Parliament-street many old buildings were removed at Essex Gate and in Essex-street. Old inns and houses of note were swept away, and eventually the old Custom House, and other revenue and shipping offices. See Gilbert's History of Dublin for an account of some of these matters.]

"On my arrival in London I soon acquired the knowledge of their method for forming plans, maps, and schemes for opening and widening their streets, and procured three Acts of Parliament passed there for those salutary purposes. But as to my principal business of procuring information or advice concerning my intended inclosure for laying the foundations, I was not so fortunate as to obtain it. So after all my most zealous endeavours my friends gave me no sort of encouragement; and, having laid the plan, soundings, and borings before Mr. Labeledy, he freely told me that he did not by any means approve of that method of laying foundations in coffer-dams, as he called my inclosure, and he assured me that it would not answer my purpose. I then hurried away to my more intimate friends, Mr. Etridge and Mr. Preston, who were then carrying on the pier at Ramsgate, as I was extremely desirous of obtaining their opinions, particularly that of the former, who had been not long before sent over to project a bridge for Coleraine, and at that time was employed by some gentleman of the Corporation of the City to view our ruinous bridge, which he did. There was only a little fresh in the river, he saw the rapidity with which it fell, examined and informed himself about the roughness of the bed of the river, the depth of the water, &c. So I was sure there was no other gentleman in England that could be so good a judge of my coffer-dam, as I shall now call my inclosure. These two gentlemen were very courteous and communicative, and told me that as neither of them had seen that method practised they could not give me any sort of encouragement to attempt it, and the former concluded with these words, 'Take care that you do not find yourself mistaken;' and the latter with this friendly and parting caution, 'Above all things take care that you do not spare timber.'"

[The advice of Semple's two friends was not such as to inspire courage in the heart of a timid person. Knowing nothing themselves about building in coffer-dams, they probably volunteered the safest advice they deemed it prudent to give. Anent the bridge of Coleraine: as far back as 1718 it was determined by the authorities of that town to build a new bridge over the Bann at Coleraine. The Irish Society recommended that it should be built of stone, and not of wood, as originally intended. In 1730 the Society contributed £500 to commence the bridge of Coleraine. In 1742 the society enclosed the quay, and granted £700 and thirty-five tons of timber towards building the market house; and in 1745 it contributed £2,050 additional towards building the bridge. This bridge underwent some improvements in 1806, at the expense of the then Corporation. The Irish Society, i.e., a number of the London City Companies, held large pos-

sessions in Coleraine, acquired at the time of the Plantation. There is a place in the town called the Diamond, with other streets in the vicinity, containing a number of cage work, timber work structures, framed in London, and sent over for erection at the instance of the directors of the society.]

"As I have mentioned Ramsgate, I shall only now observe, that that work was then going on with great spirit. To me it was really wonderful to see with what dexterity they handled great blocks of Portland stone, and with what ease and deliberation they laid them under water. Mr. Preston was so kind as to favour me with a rough copy of their plan, and I then obtained several, and afterwards collected many other principal matters relative to it.

"Seeing the masterly proceedings in this great work, made me look upon my own little project in a very diminutive light. However, after staying there two days, and hearing many remarks concerning the most commodious situation for a harbour in the Downs, I posted away to take a view of that coast as far as Dover."

[In "Building in Water" Semple gives "a plan for a spacious, and a commodious harbour for the Downs in England projecting to 20 feet at low water." He inscribes his work to the king, more particularly on account of his harbour project than of the other matters treated of in his work. His dedication appears rather servile in language and tone considered in the light of the present day; but literary men, and architects and engineers were in the habit of looking up to patrons and using fawning and servile language, even far in the present century.]

"I have mentioned above that the sight of the work at Ramsgate had given me some sort of confidence in the success of my own project, but I cannot help relating a very singular incident that happened on my going down Dover-hill, which was so steep that I was obliged to alight and walk down, and my hopes of success at that instant operating strongly in my mind, I chanced to espy a leaf of a school boy's copy-book lying in the road. I took it up, and thereon found these words: 'The more positive thou art, the more wilt thou be derided if thou miscarry.' This shrewd, yet just remark, was so *apropos* to the situation of my mind at that time that it made a powerful impression on it; and if it had no other effect, it at least made me thoughtful and reserved.

"I shall not relate the various opinions of several judicious persons, whom I consulted concerning my inclosure or coffer-dam; but in brief, I purchased more books in hopes of meeting with something concerning it, as I found I could not acquire any practical knowledge from professed artists. I purchased two chain pumps, three double screws, six jacks of different sizes, two dredging machines, and several sorts of tarras; and went to Leigh, near Warrington, to procure some Leigh lime (which, as I was informed, would set under water as well as tarras), picked up a few labourers at Liverpool, and in the 23 of June returned to Dublin."

[Our architect made good use of his time while in London, and at Ramsgate and Dover. But book knowledge, &c., on bridge building was not obtainable in England at the time, and very little real practical information. The modern giants in architecture and civil engineering were in embryo or unborn. Semple may well be pardoned his simplicity in some matters; and his notions, which, however odd, were shrewd and original, and to the purpose he had in view.]

MORE BOOKS AND BETTER LUCK.

"On my return to Dublin I immediately set about to sum up and reconsider all the very little knowledge I had acquired concerning coffer-dams, the result of which was, that after all I found myself in the same predicament I was before. Not one man had I seen or heard of that seemed to be the least acquainted with the subject, nor one book that contained even that word, or conveyed the least idea or construction of it, except

what I before mentioned, but fortunately for me I went to inquire for some books at Mr. George Ewing's, and telling him of the dubious situation I was in, he informed me that his son Alexander was then on his travels, and he believed by that time in Paris. I earnestly requested he would write to him directly in the most pressing manner to procure me at any expense all the books, drafts, and plans that could afford me any kind of instruction for laying the foundations of a bridge about 25 feet under high water, in a rapid river, and send them to me with all expedition.

"He most zealously performed his part, as it happened at that juncture Colonel Belidor had completed his 4th volume of 'Hydraulic Architecture,' which was sent me, together with the other three volumes, and also a perspective view of the men at work on a coffer-dam at the bridge at that time re-building at Orleans. The language I was a stranger to, but on turning over the plates I quickly perceived his construction of coffer-dams, as we call our inclosure. My drooping spirits then instantly revived, and I immediately went on with my work with vigour, and entertained the most sanguine hopes of success."

[The Belidor alluded to was Bernard Forest Belidor, who was a Continental engineer of much celebrity in his day. He was professor of the French School of Artillery at La Feré. He is now known by his works "Dictionnaire Portatif de l'Ingénieur," "Course of Mathematics, Hydraulics, and Architecture." His works have passed through many editions. Belidor made numerous experiments on the powers of gunpowder. He was a native of Catalonia, where he was born in 1693; he died in Paris in 1761. George Ewing was a noted bookseller of Dublin in the last century. He was a large importer of foreign works, English and Continental editions. His name appears as publisher and sub-publisher to several works issued in this City.]

SEMPLE ON COFFER-DAMS.

"We have already noted the French method of laying foundations in *Butterdeaux*, which is their technical term for damming water; it is the very same of [as] that practiced by the Romans as before slightly mentioned by Alberti, Palladio, and Scamozzi, which is translated inclosure; and I think there is no doubt but that the French have not only retained, but improved and extended this most useful method, which probably has never been acquired, at least not much practiced in any of these Kingdoms or otherwise, there probably would have been some mention made of it in some of our books; but particularly in such as were relative to the building of bridges, or like work in water. They have, indeed, of late translated the word *batterdeaux*, and rendered it coffer-dam, which I presume is a word or technical term not used, or even so much as known in the English tongue before the year of 1784; about which time it was introduced in some proposition concerning Westminster Bridge, for if the English (who are so justly celebrated for learning and ingenuity) had been acquainted with this word, or with this method of laying foundations for bridges, it is not to be supposed that the authors of the Universal Dictionary of Arts and Sciences and innumerable other books would have entirely overlooked an art of such public utility. It was in the year 1787 that the Act was passed for building a bridge at Westminster, on which many plans and schemes were projected, but how to lay effectual foundations was the principal thing that engaged the attention of the Commissioners. Mr. Labeledy proposed to lay them in caissons, but several ingenious gentlemen most earnestly recommended coffer-dams."

[Our architect proceeds to quote Mr. Labeledy's objection to the employment of coffer-dams, and replies to his erroneous calculations respecting the pressure of the water, following up with his own plans and the methods he adopted in laying the foundation of his bridge in the bed of the Liffey.]

(To be continued.)

JOURNALISTIC BLAZE.

In common with others we must regret the serious fire that occurred on Saturday, the 7th, at Mr. Joseph Kelly's timber-yard and sawing mills, Thomas-street. We trust that this disaster, and other more marked ones that occurred across the channel, will result in the adoption of a better system of protection against fires in general; and that the water supply and the Fire Brigade service, which, as far as our city is concerned, need an improvement, will be at once attended to. Portions of the daily press, for reasons of their own, are never tired of informing the public of our efficient water supply and our admirable brigade; but when a disaster occurs, everything in connection is found either sadly deficient, or very defective. To compensate for the sad want of city requirements at such a crisis, our would-be public instructors treat us to long columns of glowing description, with little sense or meaning, save that of increase of the circulation of the organs in question, which would seem to be the main object.

The *Freeman's Journal* of Monday last devotes a leader, with the addition of nearly three columns, to the incidents and imaginings of the conflagration.

We are uncharitable enough to suppose that the leading article in that journal was written by a gentleman who never witnessed the fire at all, except after the havoc had taken place. We have read magazines and journals which have been issued from lunatic asylums in America, written by lunatics, and we must confess some of the articles were sensibly-written ones. If the leading article in our contemporary was written by a man in the full possession of his faculties, his friends have a great deal to answer for in allowing him to be at large. We cannot copy the article at length, but we give the following short extract as a specimen of journalistic blaze:—

"Some idea of the magnitude of the flames will be formed when it is stated that they reddened a printed page at a distance of two miles. The darkness and stillness of the night assisted the appalling splendours of the scene; and conscious as the spectator might be of its calamitous character, it was impossible not to admire the effects of the vast artificial light which shed a clear obscure upon three-fourths of the metropolis. It was in some sort a realisation of what imagination might paint of an awful Biblical episode to witness the concave set on fire by the ignipotent element beneath—spreading a lurid vault over the city, from horizon to horizon. The sea of roofs glowed far and wide with a strange dusky glimmer, and high above the shadowy mass twenty steeples stood out, every line and moulding more distinct than in the brightest sunshine, and as spectral and beautiful in the unnatural brilliance, as though each were but the fabric of a dream."

After the above lurid account, the journalism of the Sacramento Valley may sing dumb. Sam Slick, Mark Twain, Artemus Ward, Bret Harte, and Elijah Goff, are completely goffered—licked clean, in fact. Had Kelly's timber yard been the Alexandra Palace, what a state of phrenzy must not the unfortunate editor have worked himself into. Swift's would certainly have received an extra patient before St. Monday night. The literature of fire—though not a new walk in literature—would seem to be a promising one in this city, judging from the recent example. In London a well-known reporter, lately deceased, earned for himself the appellation of the "Fire King." He enjoyed a monopoly for many years in attending and reporting all the fires that occurred in the metropolis. "Charley Fowler" (for such was his familiar name) kept a close watch all over the Fire Brigade Stations, and as soon as the news arrived of the break out of a fire, Charley mounted the most convenient engine in the neighbourhood, and reached the scene along with the firemen. He supplied "copy" to all the morning papers, and in writing his "flimsy" helped his imagination by a drop of gin, instead of acting in accordance with Swift's description of a certain baird, who,

when invention failed, "scratched his head and bit his nails."

We do not pretend to know how invention was assisted in Princes-street in the inditing of the article in question. In its composition it shows there was a large amount of animal spirits consumed, whatever may have been the quality of the other commodity.

To say that we protest against the style of writing adopted by our contemporary, would be only stating the simple truth. It is prose run mad, Queen's English murdered, and common sense ostracised. It might be a pardonable ebullition of agony-piling on the part of an enthusiastic penny-a-liner, to whom a column or two of lines means an increase of daily bread—and, poor fellows! they are not too well paid at the best of times.

DRAINAGE AT NAAS WORKHOUSE.

At the weekly meeting of the Board of Guardians for Naas Union, tenders for the execution of the drainage works, according to plans prepared by the county surveyor, Mr. Brett, C.E., were opened. Henry Moran, £342; Edward Conroy, £349 18s.; James Swallow, £338; Matthew Irwin, £280; T. LeStrange, £367 11s. The tenders were, on the suggestion of the chairman, referred to the surveyor to report upon.

CIVIC LYRICS.—No. XXXIX.

BARNEY MOFFET'S PHILOSOPHY.

Oh hang "the honour of the thing"—
It don't suit Barney Moffet;
He shoots his birds upon the wing,
And plucks them for his profit.
A talking T.C. who can talk—
A man of mind and matter
Is no chicken, but a hawk,
Who laughs when sparrows chatter.

Just so, old Hawkbill, make your hay,
And while the sun is shining
You know what wise saws always say—
Clouds have a silver lining.
A fool is he who grinds his grist
With wheels of narrow margin;
T.C.s who have the "blarney" kised
Make tender Poor Law Guardians.

"What's in a name?"—what's in my name
That beggar brats should scoff it?
The world knows from whence I came:
No muff can be a Moffet!
'Twas self-exertion raised me up
Above all bottle holders;
I've won my spurs and silver cup
By leaping o'er men's shoulders.

Right you are, but rather late
You kindle up your embers;
The city needs a candidate,
Or one or two new members.
'Tis for "the honour of the thing"
"The what?" shrieks Barney Moffet,
Every bee who holds a sting
Sucks honey for his profit.

CIVIL.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

GREAT LYING-INN STREET.

We cannot now exactly remember the date when we first traversed this very long, zig-zag thoroughfare. As far as our boyish recollections extend, it was a great shopkeeping street, and the private dwellings were very sparse, and far between. Lying-inn street was always a street of many inns and outs, and continues so till the present hour. It has olden memories—proud ones—and a life full of ever-varying changes and vicissitudes. From end to end it is a brick of a place, long built up, though for the last forty years showing a rather downward progress in features and surroundings. Well-to-do tradesmen still exist here, and a few of the older class and homely order; but its great warehousemen, merchants, and manufacturers are all departed. This mid-northern outlet of the Un-

known City was never designed; the ancient roadway must have been built upon as it was found winding along through the olden fields and suburbs, like the streams through the meadows. A century and a-half ago the weary traveller could have rested in many fields by the wayside. The hills to the west, which rise somewhat sharply from the base of this thoroughfare at its northern extremity, are covered entirely with brick and patches of garden, and some squares and public buildings crop up out and about, some of which are not of yesterday. It is, however, with the street itself and its belongings, and not with its tributaries, we have to do now. So we will let the Oldest Inhabitant pursue his gossip.

"Great Lying-inn Street, sir, has had always in my time much matronly grace and Spartan virtue. The tide of fashion and wealth once swept for a short period in this direction, and up on the heights to the left of where we are standing, many fine mansions were erected in the latter half of the last century. Some squares were laid out to accommodate the nobles and gentry, but they were never successfully carried out or attended to, and they remain yet models of bad management and horticultural craft. Only one of these particular squares concern our present visit; and its condition has never in my long recollection been above censure. I verily believe that the houses erected on either side in Danby and Avenbush-rows, owe a good deal to the gardens they face. The sand that composes the mortar with which they are built was, in part, excavated from the sleepy hollow these mansions look out upon. The great Convalescent structure and the circular building alongside, are, I think, similarly indebted to the excavation which once took place at their rear. Passing from the gardens to the buildings themselves, they are worthy specimens of architectural skill. The large building is a very excellent charity, which owes its foundation to the worthy Dr. Mosse, whom all should bless, the ladies particularly. That worthy benefactor, about the year 1745 opened a small hospital, at his own expense, in South George's-street. His efforts in the right direction brought him some support, and with the assistance of a few thousand pounds from the Government of the day, he was enabled to open the admirable institution which we are now viewing. Well, sir, I believe the foundation was laid in 1751, and opened in about six years afterwards, to accommodate, as a first beginning, fifty patients. A foreign architect—a native of Germany, it is supposed—of the name of Richard Castle or Cassells, designed it. This architect had good practice in this city, and was mostly employed by the Leinster family. It was said he designed the old Irish Houses of Parliament; but this is denied on the authority of certain resolutions of the Lords and Commons, which still exist, shewing that one Edward Love Pearce was the architect, and received several payments for the same. On the other hand it is asserted that Castle supplied Pearce with the designs and plan, who cheated him in certain money transactions. However there is no doubt about the present structure. In design you see it is what may be pronounced good, though it presents little novelty in detail. If we remove the cupola or steeple, the house will look as an ordinary nobleman or gentleman's mansion in appearance. Withal, it is proportionate throughout, and a well-built cut stone structure.

"Many stories were told in my young days about the friendship existing between the architect and the founder of the building, who were wont to spend much of their time together over their wine on evenings. The architect was a very whimsical and improvident man, and like all with similar characteristics, was a good natured and jolly companion over his cups. A story is related of our architect that he had an aversion to shaving himself, and was very cautious as to who performed that operation. He at last fixed upon a Mr. Simpson, a skilled stucco-worker of that day, and that craftsman performed the operation for years with credit

and profit. The architect always had him at his work, and when not requiring him, recommended him to other employers. Our architects of the present day, sir, might imitate Mr. Castle in some particular. Although he had the habit when not liking his works of pulling portions of them down, yet he was very frank and open with all the carpenters and masons, and other workmen engaged. When he wanted to point out any alteration, or give directions, he made all the workmen follow him, which they did sometimes in a long train. The architect, sir, left no children after him. He married an Irish lady, a native of Lisburn, but she died some years previous to him. Castle died at Carton, while engaged on some work for the Duke of Leinster, and was buried in the Church of Maynooth. Whenever the lives of our Irish, or adopted Irish architects, are written, the works of Castle will demand honorable mention.

"Among his other works, he erected the first stone lock in Ireland—that on the Newry Canal; and he also appeared as author, having published an essay upon supplying water to this city, in days when pumps and conduits did service in that respect.

"The Circular Building is, within, a good piece of designing, and is the work of an architect about whom little is known. Where George Ensor was born or died, or what other buildings were designed by him, I know not. I have traced the name back in Dublin documents, but I have failed to identify the architect with other families bearing the name. Had Castle's and Ensor's work been designed originally to stand opposite the Mall, particularly the former, the effect produced would have been very good. Johnston, I believe, designed some buildings which form a portion of what is now known under one name.

"The houses, sir, which form the three sides of the gardens, are all well-built structures. Their interiors show good finishing, both in joinery and stucco ornamentation. Some of their chimneys exhibit superior handicraft; and the staircase and handrails evidence well-executed and solid work. Old as they are now, there is nothing shaky about them. There is as much carpentry and joinery in one of these houses, sir, as would do for half-a-dozen of our present day speculative structures. In skirtings, surbase, backs, elbows, linings, boxings, shutters, soffets, architraves, mouldings, and other details, there is as much genuine joinery to be seen in one room as would astonish one of our modern machine-made carpenters. Artificers knew how to work in the eighteenth century; although there were no wood working machines to be found. A shower of rain in these days would wash all the trade out of the majority of our wishy-washy artizans. We have shorter methods now, and many of them very bad ones; and men will "strike" before they hear. Jack is as good as his master in these days, and, perhaps, a great deal better; and it seems to be worth while to strike, that one may be a master of himself, at least, for a little while.

"Up the street there, beside the car-stand, was a spot known as "the Hollow." This valley extended, many years ago, half-ways into the street; but within the last thirty years, a portion of this waste was reclaimed, and the "Hollow" contracted to smaller dimensions. You must go down steps here, sir, to shop, and up steps whether you wish or not to reach the hall-door. The houses in the Hollow would appear to be some of the first that were erected on this portion of the street.

"Doctors, apothecaries, druggists, and attorneys, in my early days, were plentiful in this quarter, but all the dandy practitioners have died out, and have left their physic to the dogs. The publicans and sinners throughout the whole length, hold on, and make a good living still, despite the *fetches* of Permissive Bills, and the discordant music of some temperance bands. Publicans are not to be frightened by tom-toms or the can-can, particularly as Old Tom and cans are articles of their staple trade. A few families of

French extraction, descendants of the Huguenots, lived up and down this street several years ago. I was looking up their names a few days since, but I found they had all disappeared within the last quarter of a century.

"Nearly opposite to Danby-row a famous public-house once existed, and probably does still. It was kept by a lucky vintner of the name of Mixin, who was fond of mixing in company and in draughts. An illuminated lamp was suspended over the entrance door, emblazoned with the letters—"Come with your can." There was a front parlour in this noted house hung with some remarkable pictures, oil paintings, and prints, commemorative of sporting, racing, and pugilistic encounters, dating back to the close of the last century. Irish heroes—from the days of Brian Boru to Dan Donnelly, and from Tiger Roche to John Langan, of Mud Island fame, graced the walls. A sort of convivial sporting club met here weekly, or oftener, to discuss the politics and pugilists of the hour; and it often happened that those who came with their cans stopped gagging at the counter, taking more than their allotted quantity from the quart that changed lips often, and afterwards going home minus their cans, but not of what they should contain.

"Oh! indeed I do, sir, remember very well the period of Langan's death. He died in Liverpool, and it was announced that he would be brought to Dublin for burial. His coffin did arrive, but I cannot say his remains were within it. A report was very current that stones supplied the place where the body ought to be. However, body or not, the coffin was waked for a certain number of days at "Come with your Can," and hundreds of the mud-larks and the Liberty-larks congregated to honour Mr. Mixin with their custom, and pay their last respects to the chivalrous "Jack Langan, that never sold the pass, or disgraced his country." In due time, after all the honours of a true Irish wake were exhausted, the immortal Jack was carried to Glasnevin, the longest way round being chosen, on the principle that it would be the shortest way home. Long before the coffin reached the graveyard, the hearse was relieved of its load, and the shoulders of brawny Mud Islanders bore the shell to the grave. I have my doubt, sir, about the whole affair; and as there are sermons in stones, I will act the part of the Good Samaritan, and let the stones, wherever they are, rest in peace. Jack Mixin, after many years of prosperous trade, retired for a long interval into private life. He had a building mania, and built terraces, which bear his name. Before the close of his life his old love for his profession returned, and he once more took to the public business with his better half in Shamrock-street. After a short career here, Death called and cried "Pass if you can," and Jack passed quietly away to join his partner in the unknown land.

"Forty years ago, sir, there was hardly a butcher's shop to be seen in Great Lying-inn-street. The old Corporation would not allow them to come to the front. They were confined to certain particular districts—called markets. A market was erected at the commencement of the present century, lower down in this street, by Mr. Cash. When first opened it looked neat, but when crowded there was hardly room for the purchasers and visitors to pass each other. As late as a quarter of a century ago this market was well attended, and there was scarcely an empty stall to be seen. There were butter and bacon men, in fact, provision merchants, as well as butchers, in this market; but Cash's market has gone down, down to the lowest depths, and now lies in the very 'Slough of Despond.'

"Our butchers have all broken from their shambles, with their bullocks, pole axes, ropes, windlasses, and all their bloody business is carried on in our best of streets. They know we cannot very well do without them, so they follow our footsteps with a pertinacity that is far from agreeable betimes. There are tender-hearted fellows among the butchers, despite their calling; and many of

them have helped in our public charities. Though they necessarily kill, they have enabled many to live, who would otherwise have been found lying out in the cold in Great Lying-inn-street, and other more aristocratic thoroughfares in Unknown Dublin."

Being unable to conclude our visit in one short afternoon, we mutually agreed to continue our investigations on a future day in this quarter, with our friend the "Oldest Inhabitant."

THE BUILDING TRADE WAGES MOVEMENT.

THE agitation among the building operatives of England and Scotland for an increase of wages, and in some districts for a shortening of the hours of work, continues. The carpenters and joiners of London are about to strike for an increase of one halfpenny per hour. The notice they gave the master builders expired on last Saturday, but an aggregate meeting of the trade is to take place on Tuesday to pronounce definitely upon the subject. They seek 9d. per hour, their original memorial being "nine hours and ninepence." A compromise was effected last year by the accepting of 8½d. The master builders at present decline to increase the wages, but say they will be prepared to give the additional halfpenny in March, 1874. The masons' notice to the employers expires on the 19th of next month. At a meeting held on Wednesday last the following resolution was unanimously passed by their body:—"That this meeting of the masons of London having considered the letter received from the Master Builders' Association, desires to express its regret at the proposition therein contained, and pledges itself never under any circumstances to return to the one o'clock on Saturdays, and further declares its full determination to firmly adhere to the terms of the memorial sent in by the committee."

The building trades of London for some time past leave off on Saturdays at 12 o'clock, but the masters desire that the old time should be returned to, but none of the building trades are likely to agree to this proposition.

We see by a public notice that here in Dublin one of the carpenters' societies has "unanimously resolved that, in consequence of the advanced price of necessities," that henceforth their wages shall be 5s. 8d. per day.

NEW INFERNAL MACHINE.

THE *Birmingham Post* publishes an account of a new infernal machine, the particulars concerning which are somewhat startling. The matter was previously alluded to in one of the letters of the Paris correspondent of the *London Standard*. The *Post* writes:—

"We mentioned the other day that the French Minister of Marine had sent out a circular, warning shipowners, captains, and insurance agents against a new 'infernal machine,' intended for the destruction of vessels, which, for fraudulent purposes, it is desired to destroy. But for the respectable authority on which the warning was given, the alleged invention might have been regarded as a hoax, it was no hoax, however, but a grim and horrible fact. One of the villainous contrivances referred to is now lying before us as we write these lines. It is an irregularly-shaped piece of metal, about six inches long, by three broad, and two and a-half deep; and it is so constructed as exactly to resemble a small block of steam coal. Indeed, the specimen we have is evidently modelled from an actual piece of coal, and it is coloured a bright black, so skilfully that on casual inspection it would readily pass muster for coal, and so might be put into the coal-bunkers of a vessel without exciting the least suspicion. The interior is hollowed so as to admit of the introduction of a detonating compound, and a mechanical contrivance is arranged in the hollow part so as to ensure explosion at a desired moment. We have also an exact description of the materials employed to fill the shell—for such it may be called—but these, for obvious reasons, we decline to publish. There is only one thing at all satisfactory in reference to this diabolical invention—that is not of English make."

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood has good and well-written papers, both literary, social, and political, this month. There is a paper entitled "Amateur Theology," which is a severe attack on Mr. Mathew Arnold's questionable book on "Literature and Dogma." "The Doctor Abroad" is an amusing paper. Mrs. Oliphant's novels come in for a singular dissection. "The Second Gladstone Administration" is another of those severe onslaughts on the Liberal Cabinet and its shortcomings, which have of late been so remarkable in this magazine.

Tinsley for this month presents its readers with the usual complement of literary food. "A Pair of Blue Eyes" has reached its thirty-sixth chapter, and still maintains its interest. The author of "Home, Sweet Home" has come to the finish of his tale in these words—"To my thinking there is no tenderer conjunction of words possible than that contained in the sentence, 'Home, Sweet Home.'" Amongst the minor papers in the number before us we may note—"Woman's Love," "The Picture of Health," and "Not for Love." The poetical pieces are of average merit.

Frazier is an excellent number. Professor Max Müller deals with Darwin's Philosophy of Language in his usual able manner. "The Extension of Railways in America" is an instructive paper on the subject, containing much information. The "Coming Transit of Venus" is a very attractive article by Mr. Proctor. The "Peasantry of the South of England" is a well pictured and thoughtful paper. "The Ethics of St. Paul" is a defence of the Christian doctrine of that Apostle. "Our Irish Policy" is a political contribution of merit from a Conservative point of view, in which the present Ministry are rebuked with much spirit and force.

London Society shows an improvement in its political department, but it is scarcely up to the mark in its prose articles. Sir C. L. Young's "Before the Glass," Mr. O. Ward's "On the Threshold," and Mr. Estcott's "Love and Money" are very fair specimens of the poetical order. "Rough Shooting," "Partridge Manors," and the review of new books are up to the average in the prose line. Florence Marryat's "No Intentions" is continued, and is a good serial tale.

Macmillan's Magazine gives another instalment of Mr. Black's most interesting story of "A Princess of Thule," not, we hope, the *Ultima Thule* of that improving writer's efforts. Mr. Routledge has a readable paper on India; and the Dean of Westminster contributes a good translation of the Latin hymn, "*Veni Sancta Spiritus*," which is very finely rendered.

The *Gentleman's Magazine* has a few good papers, among which "Venus on the Sun's Face," by Mr. Proctor; "Pointer and Setter Field Trials," "Life in London," by Mr. Blanchard; and "Life in a Carriage and Cart," by an "Octogenarian." The serial story "Clytie" continues well, and is full of interest. The poetry is not of a very high class; yet on the whole the magazine is worthy of its age.

St. James's Magazine presents its readers a fair amount of good reading matter. The continued tale of the "Cravens of Cravenscroft" keeps up its early promise, and does not flag in descriptive power.

Temple Bar is varied in matter and style. "The New Magdalene" of Wilkie Collins is continued, and is a somewhat sad, yet touching story. The demise of the late Mr. Macready forms the subject of an able criticism of the drama. "Follow My Leader," "Beef and Libel," and "Eugene Aram" are among the best of the other papers.

St. Pauls has a few interesting contributions of a light and amusing description. Mr. James Greenwood writes one in his characteristic style, entitled "The City Rag Shop." "Euripedes in Modern English" is a bit of poetical criticism worth perusal. The "National Demoralization of Tea" affords some amusing reflections as to its properties

and effects on the nervous system, in contradistinction to alcohol. "Mr. Carrington," the serial tale, is continued with spirit.

Cornhill Magazine contains amongst its best papers "New Rome," "The French Press," and "Our Civilization." "Zelda's Fortune," the serial story of the number, has some very interesting chapters. On the whole, the magazine for the month is a fair average number, and very readable.

The *Argosy*, along with its good serial tale, "The Master of Greyhounds," has two other contributions worthy of praise, "Aunt Janet" and the "Lotos Eater." This is a good family magazine, and its papers are mostly of a select kind, and well treated.

Belgravia is equally good in prose and poetry this month. George Augustus Sala's papers on "Imaginary London" are continued, but the present instalment is not equal to his preceding description. Homer must sometimes nod, and we believe George Augustus is not very well in health at present, and is enjoying the south-east coast breeze at Hastings. "Critics and their Prey," "German Requisitions," and "State Tailoring" are well written and interesting papers. Mr. Saville Clarke has some fair lines, entitled "Mountain Memories," which run smoothly.

The *Fortnightly Review* is philosophical and metaphysical. "The Assumption of Agnostics" deals with the rather subtle question of consciousness, and the doctrine of Mr. Herbert Spencer is somewhat severely handled. Mr. Mosley contributes a paper on the late Mr. Mill, and Mr. Harrison on "The Religion of Humanity," both of which are ably written. Mr. Trollope's serial story, "Lady Anna," moves apace with much interest and spirit.

ART UNDERGROUND.

THE Caves of Aganta and their art-treasures are affording at present a theme for much interest and wonder. An Indian paper publishes a communication from a correspondent shewing what Mr. Griffiths and a number of the students of the Bombay School of Art are doing to save the remains of the paintings and the other objects existing in these caves. He writes that, on accepting an invitation from Mr. Griffiths to pass a day with him in the excavations, "after a couple of hours' pleasant stroll we reached the caves, and as the roads had been repaired and the caves thoroughly cleared on account of the late visit of the Governor of Bombay, old as I am, I soon found myself comfortably located in Mr. Griffiths' atelier in Cave No. 1. Of course I was tired, so ensconced myself in an easy chair, puffed a weed, had a peg, and then began to look about me—and what did I see? Signs of industry on all sides; outside were the moulders taking portions of the beautiful frieze which runs round the *façade* and portico and chapels of this cave, and though they have been very much delayed, and at times had to cease work for want of plaster of Paris, which was sent from Bombay, owing to Mr. Terry's time being so entirely taken up with preparations for the exhibitions, they have got through a great deal of work; but how it is ever to be got to Bombay is at present doubtful. Inside there was Mr. Griffiths himself and four students mounted upon trestles, and copying by daylight the various panels composing the ceiling, whilst two other students were copying by lamp-light some large and interesting pieces at the back of the cave. The industry being prosecuted on all sides was quite charming. After a jolly tiffin Mr. Griffiths asked me if I would like to see the work which had been completed. The ceiling is about 16 ft. square; a succession of circles occupy the centre; and these are ornamented with geometrical patterns, flowers, and tracery; without there is a square, and within the spandrels are groups of figures. The rest of the ceiling is divided into square and oblong panels, separated by borders; the former decorated with representations of

men and women, and of beasts, fruits, and flowers; the latter chiefly with geometrical scrolls, volutes. About three parts of the paintings are still visible, and the whole of these Mr. Griffiths and his students have completed. Besides this, Mr. Griffiths has himself completed a large group on the right-hand side of the back wall, and which I formerly copied, and one of his students has finished a large colossal figure with a highly ornamental tiara, profusely covered with jewels, and another student a large piece within the ante-chamber to the sanctuary never before copied. Another large piece from Cave No. 16, which I copied and called the Dying Princess, has also been finished. Altogether a large amount of work has been got through, and an excellent selection made; and the copies are faithful representations of the originals. A better chief of the 'expedition' could not have been selected, either as regards ability or kindness, and this latter several of the students greatly needed, as they were unfortunately dreadfully harassed with fever, when every attention and consideration was shown them; but at last five of them succumbed, and had to be sent to Bombay, and their services have of course been a great loss to Mr. Griffiths."

A "TENDER" SUBJECT.

THE tenders for the erection of the "Apprentice Boys' Memorial Hall," in Derry, have given rise to some correspondence and discussion, which we hope may result in a public benefit. The local *Sentinel*, in giving a report of the proceedings of the Building Committee, stated that the following tenders were sent in:—

"M. McClelland and Co., £3,350; Alexander M'Elwee at £3,160, and William Hutcheson at £2,825. The secretary stated that Mr. McClelland had authorised him to say that he would submit to a reduction of £100 from his tender, making the amount £3,250. At the suggestion of some members of committee, Mr. McClelland was communicated with immediately respecting his tender, the result of which was a further reduction of £130 on the part of Mr. McClelland. The tenders then stood as follows:—Mr. M'Elwee, £3,160; Mr. McClelland, £3,130; Mr. Hutcheson, £2,825. The committee, after some discussion, declared Mr. McClelland contractor at the above-named sum."

Messrs. McClelland and Co. not only take exception to the statement of the *Sentinel*, but stigmatise the report as a "gross libel." They say in their letter:—

"Referring to your report, in your issue of yesterday, of the meeting of the Building Committee to consider tenders for the erection of their new hall, in correction of same, we beg to state that the first amount placed after our name, is not the amount of our tender. Neither was our tender amended or reduced, as stated in your report; nor were we asked by the committee that it should be changed in any way. You will please insert the above in your issue of the *Sentinel* to-morrow, as we consider the report a gross libel and misstatement of facts."

We seldom interfere with the quarrels of others, but this is a subject that concerns a professional journal like ours. We consider the reply of the editor of the *Sentinel* a very fair and gentlemanly one under the circumstances, and as we have given Messrs. McClelland the benefit of their denial, we shall also extend the same liberty to the reply of the *Sentinel*. Our contemporary says:—

"We gave the amounts of the tenders in round numbers, omitting odd pounds, shillings, and pence; and this omission, which did not affect the question before the committee, gives Messrs. McClelland and Co. an opportunity of saying that 'the first amount placed after our name is not the amount of our tender.' It would have been far more satisfactory if they had given the exact figures of the three tenders, with which they are fully acquainted. If there was any mistake in the paragraph in question it was altogether in favour of Messrs. McClelland and Co. We should have stated the amount of their original estimate at £3,390, and not £3,160. We have obtained our information from a member of the committee, who feels 'troubled in mind' be-

cause he did not protest against their decision. We repeat that the secretary said that, *if necessary*, Messrs. M'Clelland and Co. would submit to a reduction of £160, making their tender £3,290. We leave the parties concerned to explain, if they can, the meaning of the words '*if necessary*.' A further reduction was made by omitting £180 provided for in the specification for heating and gas, and by inserting a sum of £20 for pipes, leaving an amount of abandoned work equal to £160, which made the estimate of Messrs. M'Clelland and Co. £3,130. We are authorised to state that if similar reductions had been made in the tenders of Mr. M'Elwee and Mr. Hutcheson—that is, if £260 had been taken from them as in the case of Messrs. M'Clelland and Co.—they would have stood as follows:—Mr. M'Elwee, £2,900; Mr. Hutcheson, £2,565. It thus appears that the reduced tender of Messrs. M'Clelland and Co., which was accepted, was £230 more than that of Mr. M'Elwee, and £565 above the estimate of Mr. Hutcheson. Messrs. M'Clelland and Co. allege that their tender was not amended or reduced as stated in our report, nor were they asked by the Committee that it should be changed in any way. Was the estimate altered in any way not stated in our report? Had Messrs. M'Clelland and Co. any communication on the subject with any member of the committee? They charge us with having grossly libelled them and misstated facts; but not a single fact has been brought forward in support of this serious accusation. We still think that the Committee did wrong in accepting their tender, and setting aside men who could give quite as good security for the proper performance of the work. The subscribers will lose several hundred pounds by the transaction, and in their interest, as well as in the interest of the public, we protest against the whole proceeding; and, in doing so, we hope our friends, Messrs. M'Clelland and Co., will not consider that they have been twice grossly libelled. If they do, we cannot help them."

Candidly speaking, as far as the eye can see and the mind understand, we must agree with our contemporary in thinking that Messrs. M'Clelland's "correction" is no correction at all, but a quibble. We pronounce the adjudication of this Building Committee a very unfair one, and a decision, though sustainable in the eye of the law, is not so in honour. It is not the first time we have protested against the practice of amending tenders after they have been sent in, to the injury of other competitors. The building committee of course are not bound to give the work to the firm who sends in the lowest tender, though it is usually done, if the party is one of well-known respectability. The whole affair has a very bad aspect, is full of suspicion, and on the face of it it is stamped with partiality and unfairness.

These are our unbiassed opinions, and we will hold to them until a more satisfactory explanation is afforded than what we are favoured with.

STREET NOMENCLATURE.

Mr. Howard Paul, who is not unknown to playgoers as an actor, and writer and singer of whimsical songs, has composed a song called the "Streets of London." This song is amusing, but nowise novel. Dublin could supply a somewhat similar number of streets for punning applications; and we may remind Mr. Paul, that a contributor to this journal some years since, through another channel, supplied an instalment of a "New Directory," in which our streets were most amusingly treated according to their names.

Mr. Paul ironically argues that London has overgrown itself, and that people live in streets they have no right to inhabit. For instance:—"We find milkmen in Water-lane, and watermen in Milk-street; clergymen in Newgate-street, and pirates in Paternoster-row; Scotchmen in Jermyn-street, and Germans in Scotland-yard; Greeks in Poland-street, and Poles in Greek-street; dear tradesmen in Cheapside, white people in Blackfriars, and black people in Whitechapel; Atheists in Paradise-row; the lower orders in Upper-street, drapers in Baker-street, Oxonians in Cambridge-terrace, and Cantabs in Oxford-street. . . . If my plans were carried out, I'd have all the farmers live in the Harrow-road, sempstresses in Thread-

needle-street, chicken-dealers in the Poultry, the shoemakers in Leather-lane, bottlers in Cork-street, all the deans in streets leading to Bishop's-road, the aurists in Lisson-grove, tobaccoconists at Cavendish-square, the cripples in Crutchedfriars, drunkards in Liquorpond-street, theatrical stars in Moon-street, all the good actors in Garrick-street (though small, it would contain them all), the fruit-dealers in Orchard-street, soldiers in Waterloo-road, sailors in Thames-street, iron-mongers at Hammersmith, gruffy old charwomen at Charing-cross, all the fast men at Fleet-street, the watchmakers at Seven-dials, the jewellers at Golden-square, and henpecked husbands—I'd doom them to end their days in Petticoat-lane."

Our citizen readers will see at a glance how easily a counterpart to the above could be found in Dublin, and many exceeding them in humour.

THE CRIMINAL INDUSTRIES OF THE THAMES.

In an article in the *City Press* on "The Port of London," some interesting data is given of the legitimate and illegitimate industries that once and still flourish, to a certain extent, on Old Father Thames. Notwithstanding the strong arm of the law, a nowise small horde of river harpies still exist upon the London river, to whom nothing is sacred, or too hot, or too heavy. Some of those Ishmaels of contemned industries eke out an honest livelihood by picking up "waifs and strays," without actually committing crime; but a large number of them still, to use a common expression in this country, "would steal the cross off an ass's back." Our own river Liffey was somewhat famous some years ago for its river pirates, and occasionally still a culprit is "caught" for picking up more than what is found in the bed of the river. The writer in our London contemporary says:—

"It is not at all easy to estimate the average value of property afloat in the river and the docks of this port; but the necessity of some systematic protection of valuable cargoes was very strongly felt nearly a century ago, in consequence of the wholesale depredations practised afloat. Mr. Patrick Colquhoun, who was mainly instrumental in the establishment of the River Police, has recorded some extraordinary statistics in connexion with knavery on board ship. It is estimated that, at the close of the last century, about 11,000 persons were concerned in various modes of robbery on the river, the tortuous character of the port of course favouring their unlawful occupations very considerably. These erratic gentlemen were elaborately classed, and are thus amusingly epitomised:—River pirates, 100; night plunderers, 200; light-horsemen, 200; receivers, of 12 classes, 550; mud-larks and rat-catchers, 200; scuffle hunters, 500; coopers, 300; lumpers, 1,200, and so on, making up the average number above mentioned. River pirates are described as a most depraved and depraved class of nautical vagabonds, who would cut bags of cotton from the quarters of ships, weigh anchors, and actually take them off, with the cables, cut lighters with valuable cargoes adrift, and follow them until they stuck fast in some place convenient for pillage. Night plunderers were composed chiefly of the waterman class, and their thieving was mainly confined to unprotected lighters. The light horsemen were associated with receivers on shore, and went on board vessels secretly armed with crow-bars, adzes, and other implements to open out heads of casks, with shovels to take out sugar, and bags to contain it. These bags were dyed black to aid concealment, and were called "black strap." Mud-larks were a class of gentlemen who prowled about the bows of vessels, (technically called Game-ships) at low water under pretence of grubbing for nails, and received from the lumpers and others any articles thrown down to them, which they conveyed forthwith to the shops of the receivers. Rat-catchers formed a most ingenious class of delinquents, for, under pretence of going at various hours of the night to set their traps on board vessels infested with rats, and to watch them, they removed and appropriated an enormous amount of valuable property. It is, indeed, recorded that they were accustomed to carry the rats alive from one ship to another, in order to increase the demand for their professional labours,

and to afford further opportunities for theft. Much in way of minutiae might be written to show the amusing but costly proclivities of these hordes of culprits. However, there is here enough to shew that some energetic reform was needed, for Mr. Colquhoun estimated the depredations committed on the Thames, prior to the establishment of the River Police, at ten millions sterling, the property exposed to theft being at that time estimated at an annual value of more than sixty millions. The Thames Police force was inaugurated in 1798, and was embodied with the Metropolitan Police thirty-three years ago. The force now consists of a total of 141 men, comprising a superintendent, twenty-nine inspectors, and 111 constables. The geography of their jurisdiction is limited above by Chelsea-bridge, and below by Barking-creek, and is divided into three districts, the headquarters of which are situated severally on the *Royalist* above-mentioned, at 255, High-street, Wapping, and on the *Scorpion*, in Blackwall-reach. There are from sixteen to twenty ordinary watch-boats constantly on duty on the river, and their preventive usefulness is enormous. They look after crimps, help the officer of the Thames Conservancy in preventing sailors and others from throwing rubbish into the river, and assist in carrying out the provisions of the Smoke Nuisance Abatement Act, as well as the regulations for the carriage of gunpowder and other explosive materials."

THE FIRE AT MR. KELLY'S TIMBER STORES.

THE disastrous fire in Thomas-street, besides throwing a hundred men out of employment, worked considerable injury to a large number of the poor, whose homes and effects were in a measure destroyed. Mr. Kelly himself has sustained a large loss, probably upwards of £20,000, for the insurance, we believe, does not cover more than about £4,000. We were glad to see that measures were taken towards the relief of those of the poor who have suffered from the sad occurrence. We forbear to comment on the disgraceful conduct described in our morning contemporaries, and we would fain believe it was not so bad as has been stated. We have elsewhere alluded to the want of an efficient brigade service and ready water supply, and we promise to return to the subject.

TECHNICAL EDUCATION—PRIZES FOR COACHMAKERS.

THE Coachmakers' Company some time since, in imitation of other London City Companies, offered prizes with a view to advance technical education for workmen. The judges appointed to award the prizes have now published their decisions, from which we learn that there were this year sixty-two drawings sent in by twenty-seven competitors, not a few being rejected because they did not fulfil the conditions laid down by the company. The first prize, of the company's silver medal (£3 and certificate), was awarded to Mr. G. Budd (first prize winner of last year), Tything, Worcester, for a set of three drawings, an elliptic spring barouche, a "C" and underspring brougham, and an elliptic spring landau, all with working sections. The second prize, of the company's silver medal (£2 and certificate), was awarded to Mr. J. Brown, Bath, for a set of two drawings, a landau to open and shut from the driver's seat, with sections, and a design for a T cart. The third prize, of the company's bronze medal and certificate, with £1 added by the master, to Mr. G. E. Holmes, Derby, for drawings of an elliptic spring barouche, with sections, and a self-acting folding step. The certificate of the company to Mr. B. Laws, Islington, for four drawings, and to Mr. J. P. Lake, Westminster, for a drawing of a dress coach. The judges, in commenting upon the drawings sent in, complain of a want of knowledge of freehand drawing, as well as a want of a general knowledge of carriage construction, no competitor seeming to have a thorough acquaintance with any department beyond his own. For the above reason they have recommended that the court should withhold the freedom of the company this year.

DRAINS, CHIMNEYS, AND WATER-SUPPLY.*

It is not my intention to enter into a prolonged dissertation upon any of the subjects to which I have now the pleasure to refer, believing that the object of our meeting will be better attained if each member of the profession will bring before his colleagues the result of his experience, whether successful or otherwise, in any department of our art with which he may have had opportunity to make himself particularly conversant. Our failures may even serve to point out to those who come after us the rocks and shoals on which we have been wrecked, as well as those laws of Nature which should be more fully investigated by the patient searcher after her divine truths. As our health, our happiness, and our very vitality depend mainly upon the air we breathe, it is all-important that in our dwellings, while we seek to be protected from the vicissitudes of our climate, we should, with warmth and shelter, have a plentiful supply of air unpolluted by the exhalations arising from the indispensable outlets which discharge away the foul water from the site of our abodes.

The question of house drains claims our first attention, and it is a singular fact that, simple as the subject of drains may appear to the general public, less attention has been bestowed on this branch of our art than on almost any other. It is true the designer of a noble edifice may gain no extra laurels from the fact of the drains being perfectly free from smell, and abundantly sufficient to carry off all refuse matter from the property; that the chimneys draw, and that the service of water is abundant. But let it only be whispered that the nasal organs are offended as you enter the vestibule; that smoke is not in the ascendant, or that water finds its level, and the unhappy designer may bind his brow with willow, and pursue his professional career under the shade of the blighting upas. The effects of bad drainage are so various and deceptive, and the causes so numerous and subtle, that I will confine myself to such points as may appear to be sufficient to represent in the main the leading principles on which drains should be constructed, and the defects most commonly to be met with in their execution, leaving the results to be dealt with by all who have to bear the responsibility of a domestic circle.

Presuming that the site of the intended building has been sufficiently provided with land drains, to carry off all water from the foundations to a proper outlet—no matter of what nature the subsoil may be, whether gravel, stiff clay, loam or rock. Any drain intended to carry off the foul water from scullery, closet, or sink, should be formed of impervious and smooth materials and circular in form when practicable, preference being given to fireclay tiles, glazed, carefully staunched in the sockets, and laid to a proper fall of at least one inch in ten feet, although a greater inclination should be preferred. The junction with the main outlet or sewer should be formed with a stench trap at or near the outlet, to prevent the return of noxious gases into the dwelling; and as a trap of this description, no matter of what dimensions, will become filled up at times, a convenient cleaning cover should always be provided for removing obstructions without disturbing the drains at any of the joints. For this purpose the dip stone trap or syphon may be used, but I have found more satisfaction in adopting a trap formed as sketch which I have frequently used, being less likely to get out of order and more simple in its construction, the outlet being covered by dipping into the water. The scullery trough should be outside the house, and any connection therewith should also be provided with a water trap—the circular cast metal Ordnance trap with strong hinged cover having many advantages over the ordinary bell trap, being easily cleaned, and preventing sand or other matters from passing into

the drain, and the cover being capable of lifting without removal.

It is desirable, in all cases, to provide that the w. c. drains should not communicate with scullery drains, or any others, in order that the flow of water may have no back outlet in case of leakage, deposits of soap, grease, or vegetable refuse, the great object being to remove the soil as quickly and effectually as possible from the closet. All bends in soil-pipes are to be avoided, and the pipes kept outside of the house, where practicable. A bell crank driven into a wall has often been found to pierce the pipe, and cause the house to smell. In no case should a drain be allowed to pass under a building where it can be avoided, experience having shewn the fatal effects of the neglect of such precaution. The most trifling leakage of bad water from the joints will in time saturate the sub-soil, leaving it surcharged, to exhale its noxious fumes through the superstructure, or to find its way into the foundations, which are usually laid dry, proceeding along until it drops into the spring well, which not unfrequently is placed under one of the garden walls, for the convenience of supporting the pump. If the building be erected on rock, the fissures become filled with the foul matter, and impregnate the well; and to this cause alone many cases of fatal consequences have been justly attributed during the prevalence of cholera. Many of us have been the sad witnesses of the results of such apparently trifling errors. And the medical profession have lately decared the system which leaves so vital a subject in the hands of unskilled or careless operatives. I would, therefore, for the honor of our noble art, ask my hearers this evening to consider nothing beneath their notice, with which it has been shewn that their professional reputation may be called in question, before valuable lives may have been sacrificed to the neglect of what are sometimes improperly called little things.

One of the most common errors in ordinary house-building is the position of the well with relation to the drains and foundations. Let us suppose the course of footings laid dry without mortar, the well placed for convenience under the centre of garden wall dividing two houses, and the drains laid above the level of first course of footings, the joints being seldom water-tight, and we have then a perfect conduit in the foundations, depositing the leakage of drains into the well. Many of us have been required to report upon defective drainage where this system had been pursued, and in some cases, I regret to say, not until most serious results had called for a professional opinion on the property.

The lead suction-pipe, from pump to the well, has often been found the means of the escape of sewage from the drains into the well, the water running in the bed of the pipe, which it is difficult to staunch round with clay so as to prevent escape.

When the rain-water pipes are allowed to discharge into the drains, they act as foul air shafts for carrying off the gases generated therein, which, if confined, often force the water upward out of the metal trap, and so give admission into the dwellings. In all cases joints should be staunch; upright pipes should be carried up high above windows and roof, as any aperture in the lead gutter or behind parapets will be the means of allowing the bad air to enter the sleeping apartments. A very novel and ingenious means of ventilating a foul drain has been resorted to by a non-professional friend with success. He simply made a communication from the drain to the kitchen chimney, by a small pipe inserted under the ceiling of the kitchen, and the draught of which driving off from the drain the foul air, and being carried away with the smoke, acted as a very perfect disinfectant.

It is a singular fact that the sense of smell cannot always be depended upon where the presence of a foul drain is suspected. One member of a family may become the victim of its fearful effects, while others are utterly unaffected by it; and of this many instances must have been met with in the ordinary

practice of architects and medical men. It is not for us to enter into the subtle causes of the extreme refinement of some natures as compared to others. Let the poet sing:—

"Oh! why were farmers made so coarse, or clergy made so fine?
A kick that scarce could move a horse, may kill a sound Divine."

The exception proves the rule; and we should regard such sensitive mortals as warning beacons to save our stronger frames from impending dangers.

Houses which for years had been perfectly free from the effect of drains have been suddenly found to be perfectly uninhabitable from causes little suspected by the inmates. A single hole made by a rat through the old brick drain has been the means of forming a communication into the foul deposit of many years lying beneath the house, while the inmates were ignorant of the very existence of such a disagreeable neighbour; and even in the public footpaths of certain fashionable localities the abominable smell coming up through rat-holes leading into the common sewers have been for years a positive nuisance to the inhabitants, while no proper means have been taken to remedy so glaring a defect.

No foul drain should be allowed to cross a pipe conveying soft water to a tank, as in cases where the rain-water had become foul it has been found to owe its origin to escape from the joints of the foul drain and thus delivered into the tank.

The ludicrous array of capricious forms of chimney-pots in all countries exhibit a lamentable want of attention to all the fundamental laws which regulate the draught of smoke. From the Venetian trumpet—an inverted bell shape—the flat or hooded tops with rectangular lateral openings of the north of Italy and Switzerland, the London cowls and elbows, the French zig-zag tubes to the Irish mitred slate pots, we have an assembly of interesting objects all for the same purpose, but widely differing in their development. The range extends "from grave to gay, from lively to severe." To know the cause is half the remedy, we have learned in our schoolboy days, "Est beatus homo qui nescit causas rerum." Therefore a careful investigation of the origin of the failure should be made in all cases before applying a remedy. It is well here to observe that the defects of chimneys arise as frequently from natural as from material or constructive impediments, and I shall endeavour to place before you some of the most ordinary errors to be met with in domestic chimneys, with some hints to be attended to in everyday practice, and such suggestions as to a remedy which have been found most valuable in execution.

A chimney may be expected to smoke if an abundant supply of fresh air be not provided for the fireplace, a down draught being created by the warm apartment drawing its supply of air down the flue to the serious obstruction of the smoke while making its way in the opposite direction. A strong wind crossing the top of a flue where the draught is feeble will prevent the exit of smoke, and induce puffing at times. Adjacent high buildings or hills divert the course of the wind currents, and cause them to strike down upon the top of the chimney and render the discharge intermittent. The draught is rendered sluggish by soot lodging in the flues, rough or damp surfaces, slates lying across the top, birds' nests, or other such trifling casualties.

The altitude almost invariably determines the power of the draught. The atmosphere becoming more rarefied as we ascend from the earth's surface, the pressure therefore being diminished in proportion as the top of the chimney becomes elevated. A high chimney in a building will cause a lower shaft to smoke, the air being drawn down the latter to supply the former, and if this fact be borne in mind we need not be surprised to hear of the usual complaints of return buildings smoking, their flues being generally lower than those of the main building: the action in this instance resembles

* Paper read by Mr. Charles Geoghegan, at meeting of Architectural Association of Ireland, May 29th, 1873.

than of the syphon, if we regard the latter as inverted in order to establish the theory.

It sometimes happens that the smoke from a back chimney will ascend, and be delivered freely from the top, and immediately form a curve, and descend down the front flue of the same building; and this singular fact may be accounted for simply by a little knowledge of the science of house ventilation. Any opening in the chimney between the bottom and the top will admit a cross current of air, and obstruct the smoke. Many chimneys owe their failures to careless workmanship, projecting stones in the flue angles, or being wide in one part and narrow in another: the gathering over the fire-places should be specially attended to. Kitchen chimneys are frequently injured by inattention to this important provision. Damp and foggy weather will effect a flue, the atmosphere being more charged with moisture at such times, and vapors will therefore ascend with difficulty. Drafts across a room from doors to windows injure the effective power of the flue, and too much fuel will cause the chimney to be overloaded and the smoke cannot get away quick enough. External chimneys, or those in outside walls, waste a great deal of caloric, and do not succeed as well as those within a building. When fresh air is let in from the outside under the fire-place a powerful draught is experienced; but the consumption of fuel becomes too rapid. Flues formed round on section are better than square or oblong, the angles forming deposits for soot, which reduces the smoke area.

Horizontal flues deposit soot very freely, the particles being found attached to the upper surface, which fall upon the bottom in flakes as they become heavier. The draught being sluggish, such flues are not to be depended upon, and when a descending flue must be resorted to, a rarefier to expel the cold air should be provided, and for this purpose a jet of gas has been found best for the purpose and least troublesome. Metallic surfaces attract the particles of soot, and walls or divisions across flues have the same effect in a lesser degree, and to this may be attributed the success of the very long flues constructed to contain the deposits of chimneys from lead and silver mines by which a vast amount of valuable metal is annually saved. Confining the mouth of the flue will improve the draught, as the blower will prove. A fire-place the same width as the flue will have a strong current upwards, and by inclining the back of the grate into the room instead of forming the slope in the opposite direction with a very narrow aperture for smoke, the heating power of the fire is greatly increased. Each grate should have a separate flue, and all hobs or other wide grates are objectionable, as the air escapes up the chimney at each side without catching the smoke in the current.

I need not here observe that the open fire-place is perhaps the most luxurious, and least economical mode of warming an apartment, a greater amount of actual heat may be obtained by one-fourth the consumption of coals if burnt in a well-designed close stove, and when the external sides of metal stoves are lined with glazed ornamental tiles (as is customary in Germany) the atmosphere is not affected by contact with the iron.

A fire of wood or turf will require a grate of larger dimensions than one of coal, and the chimney should be properly proportioned thereto. The tops of chimneys should be curved outwards to assist the exit of the smoke, a flat top being found injurious when the wind is blowing across it. A basement or ground floor may be made the means of heating moderately the entire house, if the flues are made to pass backward and forward under the paving in a similar way to those of the flues heating a Turkish bath. The lower strata of air being heated will ascend, and each succeeding body of cold air in like manner, until the entire cubical contents of the building becomes generally warmed. If this system were commonly resorted to we should find a corresponding reduction in the

amount of the coal expenditure, which has lately been a matter of rather serious consideration. Factory chimneys will require special provision in proportion to the power of the machinery, the consumption of coals being in well-constructed furnaces about 6 lbs. per horse power.

It has of late years been the custom to form these flues wider at the top internally than at bottom, and with very good results. The reason for so doing has not been fully investigated; but it is evident that the friction of the smoke becomes diminished in ascending against the sides of the chimney. If we consider that in a well-constructed marine engine the draught is powerful enough to maintain perfect combustion, and expel the smoke, while a vessel may be going against a head wind at the rate of twenty miles an hour, it will at once be evident to our common senses that a smoky chimney must mean a clumsy and ill-contrived means of wasting fuel, and rendering our habitations anything but habitable. The science of combustion is understood, but the details of working out the principles are usually left to the care of unthinking or incompetent hands.

Domestic Water Supply.—The cistern which receives the supply from the main for household purposes, should never be allowed to supply the pan of a w. c. direct, or to overflow into a soil-pipe, even if a trap be provided at the outlet, the foul air being known to escape up the pipe as the water descends, and lying on the top of the water will become absorbed by its poisoning the water. Of this a familiar instance occurs where tobacco-smoke has been found to be condensed on the surface of water, and singing birds poisoned by drinking it. Each w. c. should have a separate supply cistern, if not taken direct from the main, as may be where the constant high pressure is laid on.

In cases where old cisterns have been allowed to supply closets, the best means of overflow is to let the pipe discharge out on the roof, or into a rain-water pipe; and where supply is taken from the valve to the pan, a small air-pipe from the former should be carried outside the house, and a large floating ball chained to the valve may then be made the means of overflow, when the excess of water lifts the ball and allows the surcharge to escape without allowing the bad air to return from the pan or soil-pipe.

For cold water, a slate, stone, or cement cistern is preferable to one of lead, copper, or iron. The water when very soft decomposes the iron; if hard, it often destroys the lead, and the copper may be affected in either case, and requires to be kept particularly clean. It has been found that when soft water is admitted into a cistern which formerly was used for hard water, the calcareous deposit left on the sides and bottom by the former is dissolved by the latter, and this fact will account for the old pipes and boilers becoming foul where a change is made in the supply from hard to soft.

All the cocks for high-pressure service should be made self-closing to prevent waste, and it seldom happens that the ball is made large enough to have floating power to shut off in cisterns, the result being that a constant running may be noticed in most cisterns causing enormous waste, and consequently extra cost on the ordinary consumer, as the charge must invariably be made in some quarter. If water companies took means to prevent such reckless extravagance, the poor could have the benefit of having a plentiful supply at lower rates. A high-pressure safety cock should be supplied outside of each house, worked by a chain and lever, in case of accidents from leakage or bursting. The supply-pipe for ordinary dwellings must not exceed $\frac{1}{2}$ in. diameter where the service is constant; and all external pipes should be protected from frost by felt, sawdust, hemp, or other casing.

Kitchen boilers should have their circulating cisterns made of galvanized iron, or have lining of tin, copper, or lead—the hot water acting upon the cast iron it becomes charged with rust, and unfit for drink-

ing or for baths. A safety-valve should in all cases be provided for the kitchen boiler where closed in, and for this purpose I would suggest a small piece of sheet lead, bolted with plate and washer on the top of the cistern, in order that any pressure from within should cause the lead to bulge, and open before extreme expansion by steam could occur. The supply cocks from the boiler should be made to work two ways, so that if cut off from one service the other should be left open, as it frequently happens that baths and conservatories are heated from the one house boiler. The supply for the house should be taken from a pipe above the boiler, so that it could not be left empty at any time. And the cold water service should never dip into the top of the boiler so as to leave any air space above the water, this being the common cause of noises and reports.

All water for drinking purposes should be filtered unless when taken from a perfect spring, river water containing organic matter largely, the well being seldom free from contamination, and the roof water tainted by the soot in the gutters. For this purpose a very simple and ingenious apparatus has been sent here for your inspection, which I consider will meet with general approval from the public. I am also glad to have to notice a very simple and effective w. c. apparatus, with supply cistern attached, which can be set up at a very moderate cost, and which has the advantage of being perfectly free from all connections with metal surfaces, which materials should never be allowed to come in contact with water or soil from a house closet. In stables also, all metal troughs and drains should be avoided, the waste water generating ammonia when allowed to lie in metal, from which cause horses have been known to become blind.

The invention now exhibited for allowing only a certain quantity of water to be let off every time a closet is used, appears to answer its purpose well, and has been designed to meet the new regulations of the water company's for prevention of waste, the modes of adopting the apparatus to existing cisterns being extremely ingenious and simple.*

I have also here a full-size working model of the invention which I have patented for protecting the old lead pipes from bursting by high pressure water or from frost, and which, after being three years in operation, has proved to be of extreme value for its purpose, and perfectly self-acting, and is known as "Geoghegan's Patent Regulator."

This apparatus admits the high-pressure water supply into the highest story of any building, filling the cistern or tank, and instantly causing by its own action the main inlet situate inside the house to be perfectly closed, the cock opening as the water is used through any of the closets or cocks throughout, thus saving the alteration of all existing low-pressure pipes, cocks, &c., in old buildings, and preventing the waste of water by moderating and regulating the pressure. The supply-pipe being exhausted by means of a self-acting valve when the cistern has been filled, no damage can occur to the pipes where exposed.

The water at high pressure being admitted through the valve of the apparatus, passes up to the highest cistern to be supplied, from which all other branch pipes may be taken at ordinary pressure. An air-box 11 inches by 11 inches, is placed in this cistern, inverted and firmly secured by straps and screws to the top of the cistern, the warning pipe being united to the air-box, is carried down and attached to the lower chamber of the regulator, which is divided from the upper by a diaphragm, a tube being fixed in the centre for the guidance of the spindle to which the ball is secured, and which also allows the water to pass from lower to upper chamber under floating ball. As the cistern becomes filled, the air confined in the inverted box being

* For being able to place before you this evening the valuable models to which I have referred, I am indebted to Mr. Maguire, of Dawson-street, who kindly volunteered to forward them for your examination, on learning that I was about to read a paper on subjects connected with sanitary improvements.

condensed by the pressure of the head of water rising 4 or 5 inches above the open bottom, is forced down the warning-pipe into lower chamber of the apparatus, depressing the water in same, and causing it to ascend in upper chamber, in which the ball floats connected with the high-pressure valve. As this cock closes, it raises the balance tube charged with mercury above the horizontal position, allowing the mercury to fall over to the other end of the tube, the momentum of which acting upon the lever of the exhaust, causes it to open after the main inlet is closed, and thus empties the rising main from the regulator up to the cistern.

As water is drawn off from the cistern, the condensed air becomes liberated, the ball again descends, the exhaust cock closes by weight of lever, and the inlet opens as before.

BOOKS RECEIVED.

A Review of the Peat Question, its Position and Prospects, &c. By J. MacC. Meadows, M.E., Member of the Peat Fuel Commission. Dublin: M'Glashan and Gill, Upper Sackville-street. 1873.

This is a most useful and opportune work. It treats of the "Turf Industry" of this country with foreign comparisons, its present state, how to economically work and utilise our large peat deposits by existing methods of cutting, drying, and compression—in fact how to make our turf industry a regular staple trade profitable to the workers, the users, and the nation at large. The more important methods for compression of peat are passed under review, and their methods fairly stated. The case of the Netherlands is instanced as a people who, without either patents or peat machines, have, by their unflagging industry, made their bogs a source of wealth resulting not only in developing the prosperity of individuals but the country at large. The question of Turf Industry is a question which interests us much, and we have on several occasions touched upon it. Although it is upwards of a quarter of a century since Sir Robert Kane, in his "Industrial Resources of Ireland," brought the question prominently before the country, yet little has been done in developing our peat deposits. The subject needs thorough ventilation, and feeling its importance we will return to a more detailed examination of Mr. Meadows' little work in our next issue.

An Analysis of the Population, Acreage, Expenditure Under Sanitary Acts, and Medical Charity Acts, &c., in Ireland. Dublin: J. Atkinson and Co., printers, 72, Grafton-street.

This is a very valuable and important analysis prepared for the Irish Poor Law and Medical Officers' Association, by the hon. sec., D. Toler T. Maunsell, M.B., M.R.I.A. Of the various provinces, counties, rural and urban districts, we have the population, area in acres, expenditure under the Sanitary Acts, number of dispensary districts, the medical officers engaged, their average salaries, poor law valuation, and the poundage on valuation.

The information is most interesting, and the statistics on the whole cannot be but of the greatest service. It is remarkable to note the expenditure of the various towns and cities under the Sanitary Acts. While some very small towns have expended several hundreds, there are other very large ones which have contributed nothing throughout the entire year. We will return to the analysis probably in our next issue, and deduce some important lessons from the statistics given. It is worthy of deep consideration that the amount devoted to expenditure under the Sanitary Acts compared with the valuation was represented by one-eighth of a farthing in 1871. The total poundage on valuation for poor rates was 1s. 8½d. The long delayed Public Health Bill for Ireland will, we hope, remedy the present state of

things in regard to the salaries of medical officers. They ought to be placed on the same footing as their brethren in England, whose interests are cared for under the English Act.

THE NEW AIR GAS.

THE new air gas was shown for the first time in Dublin by Professor Emerson Reynolds, on Friday. The apparatus used was simple, and consisted only of a small gas-holder, constructed by the "Air-Gas Company," and a vessel in which the hydrocarbon liquid was contained, and which the patentees used to convert air into an illuminating gas. Common air was simply drawn over the hydrocarbon into the gas-holder, and in its passage it became charged with the vapour of the illuminating material, and was then stored in the reservoir for distribution through tubes like common coal gas. The air gas was burned at a jet during the lecture, and a steady and brilliant light obtained.

A SANITARY NOTE.

THE return of sanitary operations for the month of May has been issued by the Public Health Committee of the Corporation:—2,721 tenant-houses were inspected during that period, 218 convictions obtained, 1,482 sanitary defects remedied, 842 dwellings cleaned and repaired. There were 17,250 lbs. of diseased meat confiscated. The total number of cattle slaughtered was 11,741. The return is very minute, and includes a considerable amount of figures representing the variety and quantity of the work done.

ARCHITECTURAL ASSOCIATION OF IRELAND.

THE annual excursion of this association is announced to take place on Saturday next to Bective Abbey and the abbeys and castles at Trim. The members will start by the 9 a.m. train from the Broadstone station for Bective, where, after visiting the abbey, cars will be in readiness to convey them to Trim, from which they will return by the 4.10 p.m. train to Dublin. Members purposing to join the excursion are requested to send in their names, and also those of their friends, to the hon. sec., on or before Thursday evening next. The visit to the Munster Bank has been postponed till Saturday, the 28th, at three o'clock sharp.

HOME AND FOREIGN NOTES.

ESSEX BRIDGE.—The temporary structure across the Liffey, from Eustace-street to Swift's-row, has been opened for the public. The work of taking down the old stone structure to its foundations is being commenced. The cost of the temporary wooden bridge is stated to be £2,850—a pretty large sum certainly for a temporary structure of its kind. It calls for no particular description. It remains to be seen whether the building of the new bridge will be finished as expeditiously as was Semple's structure erected upwards of 100 years ago. As the old foundations will answer for the new, considerable time will be saved. If not, our modern engineers and architects have lived in vain. If any work is delayed, it will be probably the Main Drainage work in connection with the alterations now about being effected. The whole works relating to the new improvement ought to be completed within a year; but Corporations are slow to improve, too quick to tax.

PROPOSED TUNNEL THROUGH THE ROCKY MOUNTAINS.—A scheme is now on foot for running a tunnel through the Rocky Mountains. This may seem a prodigious enterprise at first to the casual reader, but the parties who have the matter in hand are sanguine of the most complete success. The idea is to tunnel the mountains from a point about one mile below Black Hawk to the Middle Park, running in a north-westerly direction. The tunnel to be run will, it is presumed, cut many rich veins of gold and silver, and thus a great mining interest be developed. Money for the prosecution of the work is furnished by English capitalists, who are sanguine of the ultimate success of the enter-

prise. Some idea of the magnitude of the task may be gathered from the fact that the tunnel, if completed, will be 12 miles in length. It is intended to make it large enough to be used for railway purposes, and so, if a road is ever to be constructed to the Middle Park, it will find its most convenient route through the tunnel. It will be called the Sierra Madre Tunnel Company, and the incorporation papers for its organization have already been filed.

At the half-yearly meeting of the directors of the Bank of Ireland, on Friday, a dividend of 6½ per cent. was declared for past six months.

THE MALICIOUS INJURIES ACT.—Mr. Joseph Kelly, proprietor of the timber-yard and saw-mills, Thomas-street, appeared on Thursday before the divisional magistrate, and made the statutable declaration previous to making application for compensation under the Malicious Injuries Act. Mr. Kelly stated that the fire was maliciously caused by some person or persons to him unknown. He has lodged an application for compensation, and also Mr. Mahalm, rectifying distiller, whose stores were entered and robbed on the night of the fire.

TO CORRESPONDENTS.

TYRONE HOUSE.—It was erected about the middle, or a little earlier, of the last century, and several of the buildings in Marlborough-street about the same time.

FELIX.—A chapel (Roman Catholic) formerly existed in Liffey-street early in the present century. Any of the old residents in the street will point you out the place.

LADY C.—Thanks. There will be a sequel to the gossip about Somer's hill—so, at least, we are informed by the "Oldest Inhabitant."

JOSEPH HAMILTON.—He is dead for some years. Hamilton, "the Philanthropist," as he was termed by some, was an author of some works. The one by which he was principally known was an "Essay against Duelling." We believe he will shortly come in for some notice in these pages by one of our contributors.

OLD BUILDERS.—Recollections and reminiscences relating to the old builders and architects of this city from fifty to seventy years ago would be acceptable, if put into a readable shape, and made instructive, historically speaking, as well as amusing.

SANITARY.—With the exception of some few prosecutions for selling diseased food, we have not noticed for some weeks back any sanitary work worth recording. The Dublin Sanitary Association has done some useful work; and, had their efforts been assisted by the Corporate authorities, the sanitary condition of this city would have been greatly improved.

STONE CARVER.—It is a mistake, we think, for you to cut your negro in white marble, while good Kilkenny black can be obtained. Let your tobacco effigy stand forth in its natural colour. If you make him laughing you will have to show him with a set of white teeth. Beware of the critics.

R. W., Lough Foyle—H. Belfast—Finbar, Cork—£ s. d.—A. B.—A Carpenter—S & Co., Dublin.

"A VISIT TO EPPS'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or Milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cocoa, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAONE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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The Irish Builder.

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The Development of our Turf Industry.

FIRST ARTICLE.

COUNTRY which continues year after year to import a commodity which she possesses in abundance herself, not only acts unwisely, but recklessly. To tax one's self to pay for a common want that can be procured at our doors, instead of at the cost of hundreds of miles of carriage and commission expenses, is not only a species of folly, but a censurable act of extravagance, evidencing the ignorance and incapacity of our people. Were Ireland not in such close proximity to the sister kingdom, it is probable the attention of her people would have long since been turned not only to the development of her coal and turf deposits, but to many other of her mineral resources. A potato famine, now nearly thirty years since, shewed us the evil of a dependence on that esculent for the food of our people. The horrors of that famine ought to have resulted in more good; and we are satisfied that it worked some benefit to this nation, notwithstanding the evils that it wrought. The late coal famine and still high prices of fuel ought to be productive of further good, if we are ever to profit by our disasters—disasters which can be easily counteracted.

It is to be regretted that the turf industry of this country should have remained so long in the hands of a class of men who have made it subordinate to farm work, and who have seldom attempted any improved method for its production beyond the most primitive kind. The appointment of the recent Irish Peat Fuel Commission was a wise act, but we would feel more pleasure if the evidence of that enquiry were availed of at once, and applied. In the little work alluded to in our last issue by Mr. J. MacC. Meadows, M.E., much useful and valuable information will be found, and we hope the work will be extensively circulated in quarters where it is likely to do good. Private capitalists and public companies have a fine opportunity for benefiting themselves and the public at large by engaging in the production of marketable turf for either manufacturing or household uses; there are clear fields before them in several directions, and we trust that before long we may see this field entered upon with energy. Mr. Meadows points out what others have previously pointed out, and supplies additional particulars respecting the cutting and saving of turf, of the greatest interest.

The dark brown and dense black turf of our bogs make excellent fuel. This description needs no mechanical systems to convert

it into good fuel, if properly cut and dried. It is the upper or fibrous portion of our peat deposits that needs mechanical appliances for its conversion into dense fuel. When we remember the great extent of our bogs, and the immense quantity of unfibrous peat in the middle and lower portions of them, we are struck with astonishment that such a small amount of it is utilized, no mechanical process at all being required for its treatment. The strong arms of industrious men with proper planes are quite sufficient for the production of any quantity of dense black turf, of good marketable value, as an article of general consumption. Notwithstanding the facilities by canal and railway, and the short distance many of our best bogs are from Dublin, the late coal famine found us unprepared to mitigate a most grievous and pressing want. The cutting, saving, and stacking of turf, when done by contract, does not amount to more than 3s. 6d. per ton, where the quantities are large; and, according to Mr. Meadows, if we include rent, superintendence, and contingencies, the price will not exceed 4s. 6d. Then as to the cost of carriage, the storing of turf for sale in Dublin, with 3s. per ton for cost of management and interest on capital, for 12s. 6d. one ton of good turf could be sold in the city, with a fair profit. In any other town or city in the kingdom the like advantages can be obtained where turf can be brought from the bog and stored at the rate of 5s. per ton. With such results, can there be anything but the highest regret felt at the non-utilization of our turf deposits?

Mr. Meadows thinks, as long as good coal costs in Dublin more than 25s. per ton, it would be advisable for many reasons to use turf, as there are economical considerations that make two tons of turf more than equal to one ton of coal. Practical results have heretofore shewn that the heating power of turf, if based on a calculation of even less than two to one, proved there is an advantage in using the former. We all know (at least in this country) that turf burns into ashes, expending all its heat, while in every description of coal there is a great waste in cinders or other portions which will not burn. Whether we use our fibrous or unfibrous turf, there are advantages in our favour.

We have it on the authority of more than one practical observer of the methods used in the Netherlands, that the greater quantity raised there is produced by the ordinary means, without mechanical appliances. Although we desire to see profitable mechanical systems adopted in Ireland for the compression of turf for manufacturing purposes, still we are advocates for an extensive production of ordinary turf for common wants. Drainage is necessary for some of our bogs, while there are other portions where large quantities of peat can be raised that is not covered with water. In the peat districts of Holland the turf has to be dredged up from the water; and in this instance it is requisite that it should be subjected to a kneading or treading process, mostly performed by the feet. Mr. Meadows is of opinion that to subject such black peat as is capable of being drained in our bogs to any mixing or tearing process, would be a simple waste of time. To develop our turf industry, we too are of the opinion that it must be commenced and prosecuted as a special work, and not as a subordinate industry to another, to be taken up

and laid down as it suits the circumstances of those as are generally engaged upon it.

Some capital is required in any work of importance. Systematic labour must be employed and paid for while engaged, turf must be cut, saved, stacked, and stored; so that there will be always an available stock on hands during the working season, which generally last from the month of March till some time in September.

Our climate is somewhat of a humid one on the whole; but there is a sufficient interval of dry weather to be taken advantage of to cut and save any quantity. Mr. Meadows makes a good point when he says,—“Would coal industry ever have attained its great results elsewhere if the shafts were left unworked in the spring, in order that farm-work might be done for the proprietors by the miners. Or if in the summer, the shafts were again closed in order to employ the miners upon the sowing of green crops, and the saving of early hay crops. Yet this is precisely what is done in principle in this country by those engaged in the production of turf. It is a sorry dependence to be trusting to such a practice, and upon men who attempt to unite two industries, neither of which is properly performed.”

If a really earnest attempt were made in this country for developing our peat resources, we are certain it would be crowned with success. In the absence of any cheap artificial method of drying, the weather must be taken advantage of in the working season. With a proper organization of labour, and by relays of men, the work of cutting and drying of turf could be carried on from three o'clock in the morning until late in the afternoon, and no valuable time would be lost. Night and day men work in our coal mines by a system of “shifts,” perhaps eight hours at a time, and the work of production goes on unceasingly to meet the increasing consumption of fuel.

Once the industry became properly developed, turf would not be confined to household wants. We see no reason why it could not be generally used for manufacturing and locomotive purposes. It is many years since turf was successfully used for driving the small steamers on the Shannon. In parts of Germany turf is used as fuel for locomotive engines, and no alteration of the fire-boxes was considered needful. At the railway works at Munich, air-dried turf is used similarly. Turf has also been used at works in Dublin, and has been found economical when the price of coal was far less per ton than at present. Even at thirteen or fourteen shillings per ton, two tons of turf would be far more economical in many works than one ton of coal at the present prices.

Several machines have from time to time been introduced for the production of dense turf, but they have not proved successful. Mr. Meadows cites the latest instance—that of the machine of Messrs. Clayton, Son, and Howlett, of London, a working trial with which was made last February. The capacity of this engine, under the most favourable conditions, was equal to the maceration and tearing up and mixing of only seventy-five tons of raw peat per working day of ten hours. The result would be about fifteen tons, or probably less, of dry dense turf. The same quantity of black turf, it is stated, would be produced from the lower stratum of our bogs by three or four good turf-cutters in one day, at a total cost for labour of cutting

of ten or twelve shillings. Though hand labour has here a great advantage in the production of dense turf over any machine system yet introduced for the production of it, we are still in hopes of seeing more improved machines introduced, so that the fibrous and unfibrous portion of our peat deposits may be utilized without waste. That one ton of dense turf in the dry condition can only be obtained from five to six tons of raw, passed through any machine at present designed for the purpose, does not prove much in favour of the machine-system at present available. It appears that the capabilities of the machines examined on the Continent varied from four and a-half to fifteen tons of dry dense turf per day, at a working cost averaging from six shillings to seven shillings per ton.

Pending the introduction of improved machines, or in their complete absence, there are abundant facilities for developing our turf industry, and setting thousands of our people to work in a profitable way. The furnace, the workshop, the locomotive, railway and marine, can be supplied, as well as the homes of the people, with economical fuel, produced from the lower stratum of our bogs, and machines can aid in the supply. Ordinary cut turf, for domestic use, will continue to be the staple fuel of a large portion of our people so long as it continues cheaper than coal. If but a tithe of the energy expended in the production of coal in the sister Kingdom were expended in this country in the utilization of our peat resources, we would have long since an established and prosperous national industry, not only rivaling but eclipsing that pursued in the same direction in Holland and the Netherlands.

SANITARY WORK AND SANITARY WANTS.

We directed attention in our last issue to the first annual report of the Sanitary Association of Dublin, and we desire again to commend it to our corporate authorities generally, and to our citizens in particular. The perusal of the vital statistics summarized in that document ought to create astonishment, if it does not beget a well-founded alarm. We are not panic-mongers nor alarmists; but if ever a wholesome alarm was experienced on a public question of gravest importance, it ought to be felt now in view of the danger in which this city is placed for want of due sanitary requirements. Were we to publish the entire report of the Sanitary Association, as useful and valuable as it is, we would only be placing before our readers in a great measure the statements we have reiterated over and over again in these pages. These statements—which are undeniable facts, however,—will bear repetition, and they will have to be reiterated many times until they take effect, and produce the results that honest minds desire.

The sanitary state of Dublin can only be realized approximately by comparing its tables of health with those of other towns and cities in the three kingdoms; but to properly realize the extent of the evils which this city labours under at present and has suffered for years, a street-to-street and a lane-to-lane visitation is necessary. A house-to-house visitation is also necessary in the back streets and crowded alleys of our city on both sides of the Liffey. It is a patent and glaring fact that Dublin is absolutely

unprovided for an epidemic, and that another outbreak of small-pox, cholera, or fever would find us but little better provided than in 1849.

The Sanitary Association points out the want of an isolated hospital near the river, for cases arising in port. We have long since directed attention to this want, and recommended the establishment of one, or that of a floating hospital. There is no systematic supervision of shipping, for what takes place is the merest attempt at performing a necessary duty. There are no proper and adequate provisions for the conveyance of the sick to our hospitals, nor for the disinfection of houses, clothes, or bedding. The project of building a convalescent hospital was allowed to collapse by the Corporation as soon as the last small-pox epidemic had passed away. Suitable ambulances, and not two or three ill-constructed cabs, should be used; yet although this want was pointed out repeatedly to the local authorities, no action was taken to provide them.

In the matter of the registration of births and deaths, there is a most censurable irregularity. The Registrar-General, as is pointed out by the Sanitary Association's report, has published no return for Ireland since 1869, and the latest report of the Public Health Committee of the Corporation is four years old. The delay in completing the census statistics creates another great difficulty, and accurate information is wanting which would be of great importance to know. Comparing the vital statistics of London with Dublin during a period of twenty weeks ending May 17th, 1873, with regard to *seven zymotic diseases*, this city certainly contrasts most unfavourably. The deaths from small-pox in Dublin were to those in London in the proportion of 5.0 to 8.2 per week; from measles, in that of 14.0 to 12.9 per week; from scarlatina, in that of 22.0 to 7.9 per week; from typhus fever, in that of 18.0 to 5.1 per week; from enteric or typhoid fever, in that of 30.0 to 18.7 per week; from simple continued fever, in that of 14.0 to 6.6 per week; and from diarrhoea, in that of 27.0 to 15.1 per week. The weekly death-rate from all nine zymotics was in the proportion of 188 in Dublin to 128 in London. In Dublin 1 death in 10.1, or 9.9 per cent., while in London 1 death in every 11.2, or 8.9 per cent., was due to some of these zymotic diseases. The high mortality in this city from enteric fever and diarrhoea is a matter that certainly calls for prompt measures of precaution. It has been truly remarked that enteric fever was not common in Dublin some years back, yet it is now causing twice as many deaths here as in London, where that disease has been long endemic.

The low birth-rate of Dublin shews us a state of things that needs instant investigation. Unless the registration is terribly at fault, there is something truly alarming in the figures—the result of twenty weeks! In London, while the births exceed the deaths in twenty weeks by nearly 20,000, in Dublin the deaths exceed the births by nearly 100. Here it is pointed out that if the London rate were as low as Dublin, 600 children a week less would be born in the former city, or about 12,000 less in the whole period of twenty weeks. Remembering the population of London is nearly eleven times greater than Dublin, in London we find 43 persons living on every acre, whilst in the Dublin district the number is only 31.8. This shews

an advantage in favour of Dublin. It is scarcely surprising to find that the average weekly death-rate in Dublin was 30.5 per 1,000 of the population annually against 22.2 in London.

To go through all the vital statistics of this city would be to plainly shew and prove similar results to what we have produced above. Taken altogether, the sanitary, or rather the unsanitary, picture of Dublin is a sight to make men and angels weep tears of blood! Is it not plainly proved to a demonstration that the mortality of London has been reduced of late years, and the public health improved by the sanitary precautions taken, and by forcing the observance of the laws passed for preserving the public health? Good sewerage and drainage schemes; good hospital accommodation, isolation, and disinfection; the rooting out of the rookeries and foci of infectious diseases; the remodeling of old and the building of new improved dwellings; the removal of all kinds of nuisances; a good, pure, and constant water supply; the condemnation of unsound food and adulterated provisions and drinks, and a general resort to public and individual cleanliness,—these and other kindred measures will raise the health of any city and reduce its mortality, and these are the sanitary wants we stand in need of in this city. The Sanitary Association is doing noble work; would that we could say that the Corporation is desirous of doing the same!

WANTED.

A LIBERAL interest will be given for a loan ranging from £20,000 to £150,000 or upwards. Interest will be paid punctually, and a lien will be given on certain rates. An immediate reply is necessary. Address, John Empty Chest, Town Hall, No. 5 Committee.

An Assistant-Treasurer is required. Previous knowledge of borough duties is not absolutely indispensable, as he will have ample time for learning the routine of the work from his principal, who enjoys a complete sinecure. Security equal to the amount entrusted to the holder of the office will be required. Application must be made on printed forms only, to be obtained at this office, and which will be sent to any intending applicant at a distance, on the receipt of a penny stamp.—Timothy Andrew Martin, acting secretary; Offices, Cork-hill.

Owing to the rapid approach of Asiatic cholera, supposed to be hastened by the visit of the Shah and his retinue to Europe, the Vigilant Committee of the Corporation are prepared to receive proposals for the supply of a number of ambulances. The two cabs at present in use will have to be allowed for in any estimate forwarded. The party whose tender is accepted must undertake to keep the ambulances in repair for three years, and the payment (in accordance with a resolution of the Council) is to be extended over that time. Tenders will have to be sent in on or before the 1st day of October, and the accepted party will be required to have the ambulances fully equipped by the 1st of January, 1874. N.B.—The two cabs will be used in the meantime.—By Order of the Vigilance Committee.

Two or three additional inspectors of nuisances are wanted for a southern district of the city, to supply the place of the same number who are retiring in consequence of their age. A preference will be given to pensioners of the army or navy. Superannuated policemen are eligible under the age of seventy-five. Particulars as to salary and hours can be obtained from the secretary of the Sewers Committee.

A convenient site is required for a large abattoir for the use of a northern district. A space of two acres at least of uncovered ground surrounding the site would be desirable. The council, however, will only engage to pay for the space the building may occupy. Any party who can supply a site with the above requirements may communicate at once with the Town Clerk. N.B.—The open space is only required as a matter of health, but there will be no objection to the owner using it as a kitchen-garden. A few pigs not objected to.

Any person who can supply a portable and expanding foot-bridge capable of spanning a tidal river of 250 ft., will please communicate at once with the Main Drainage Committee. The inventor or maker is not confined to any particular materials. As the bridge is only wanted for a temporary purpose, if agreeable a fair sum will be paid for its use.

CORPORATE MANAGEMENT.

We have before us the Account of the Treasurer of the City of Dublin, for the year ending August, 1872. Among the items, in *re* the Borough Fund, the Dublin Corporation Water Works Fund, the Improvement Fund, the District Sewers Fund, the Dublin Main Drainage Fund, and other Corporate funds, are many deserving the closest attention. The account, as a whole, is a very suggestive one in the matter of expenditure, and certainly calls for more remarks than we are disposed to bestow upon it at the present moment. Considering the almost bankrupt condition of the city exchequer at present, one is led to draw most natural conclusions why it could not be otherwise. Urgent public improvements and sanitary requirements can never be carried out so long as the funds of the Corporation are administered in the fashion they are just now. Debt and disgrace are inevitable. Looking at the Law and Parliamentary expenses, and the salaries paid to officers of the Corporation, there is indeed a matter for wonder. More than half of the amount paid for the former is money absolutely thrown away; while in regard to the sums paid to some of the officers, we are at a loss to understand the particular duties for which they have been paid. Certainly the work performed bears no comparison with the sums expended for the services supposed to be performed. It strikes us that there are several officers who enjoy a complete sinecure; yet these persons are allowed assistants for helping them to do—nothing. Unless they are paid for interviewing each other, murdering time, and receiving their salaries and loans for admirably performing that class of work, we do not know what else on earth they are paid for. The amount paid for sanitary work, as a whole, is, of course, not large; it is most desirable work if performed efficiently, but we regret to say there is a sad want of efficiency in a great portion of what has been carried out.

Among the Law and Parliamentary costs, under the head of the Improvement Fund, we have an item to the extent of £1,776 18s. It is worth remembering that the whole of this sum was incurred in opposing the Alliance Gas Bill in connection with it. As this audit only reaches August last year, it remains to be seen how much more expense was incurred on the head of the Corporation Gas Purchase Bill. Mr. J. Smyth, L.A., was paid £300 for his services in opposing the Gas Bill; the same, in fees, to Mr. O'Malley, Q.C., £184 16s.; same to Mr. Somerset, £178; Mr. Muggeridge, £100 for fees; Mr. Cotton, for expenses to London, £30 15s.; Mr. Franklin, C.E., another witness, £149 14s.—not bad that; Mr. Heisch, C.E., another witness, £124; making experiments with gas-burners, or rather dancing attendance at the House of Lords in the same matter, £30; Mr. Wigham's travelling

expenses to London in the same matter, £49 18s.; Mr. Stevenson, C.E., £174; Mr. W. Romans, C.E., £134 12s.; Mr. J. Romans, £227 9s. Certainly these are a tidy lot of witnesses, and a tidy sum has been expended for their travelling expenses. When the expenses of opposing the first bill is added to that of promoting the recent measure which disastrously collapsed, there will probably be little short of a couple of thousand pounds more to be added, not including incidental expenses.

Is it any wonder that there is a dead-lock in respect to funds, and that every available resource for raising funds is completely exhausted? Every rate is mortgaged to pay for interest on sums borrowed, not to speak of the principal; but not only are the rates pledged, but the character of the city and the last remnant of the honour of its representatives are bartered along with it. We are not among those who would desire to curtail the salaries of really useful and efficient professional men or officers; but for the life of us we cannot see why, in several departments of the Corporation, there should be a number of assistants and sub-assistant officers employed for performing work that the principal officer receives a very large yearly salary for undertaking to do. The work in some departments is merely nominal, yet we see large salaries paid for work that cannot exist, except by a system of very minute sub-division. In connection with the different funds—Borough, Water Works, Improvement, Grand Jury, Sewers—a very magnificent scale has been adopted by the Town Council for apportioning the salaries of their principal officers. We have alluded to this scale on a former occasion, and we desire to revert to it again. The totals are as follows:—The City Treasurer—a nice sinecure at present—£925; the City Accountant, £350; the City Engineer, £600. Ah! but this is not the whole; for the Borough Engineer is now a "Consulting Engineer," and several other crumbs fall in his way. The Law-agent, £400;—this gentleman has other fees besides, through his connection with the Corporation. The Town Clerk, £500; Assistant Town Clerk, £300; two Borough Auditors, £100. A sum total of £8,175 is paid for salaries apportioned according to scale for a half-dozen of officers who in addition receive other moneys by their connection with the Corporation. Comparing the population of Dublin with other cities, it will be seen at once whether this unfortunate city is paying too dear for her whistle or not.

There are some nice items in the Water Works Fund, but we have not time at present to dissect them. Here's one, for instance—"P. Neville, C.F., to pay for sundries, £25; official visit to works, £11 1s.—Total, £36 1s.

The organisation of the Sanitary Department, and the conduct of that department, call for reform in many ways. The Public Officer of Health does not receive too much for his duties, but there are other subalterns and sub-officers who are receiving quite enough for the little work they know how to do. There are several payments made in connection with the Sanitary Department which would not bear close scrutiny, and it would be difficult to ascertain in some instances whether work charged for has ever been satisfactorily performed. There are so many things at present done in the name of the public health, that we wonder much that some sanitary officer is not found charging the Corporation for the trouble he takes in washing his face and cutting his finger nails! Everywhere in the Borough Account we meet with extra payments for "extra services." The Corporation, it would seem, pay double and treble time for overtime on the part of their officers. We dare say extra services are easily made out and certified for. Clerks, or other officers, not in a hurry to go home in the afternoon, may stay and read the evening papers, or amuse themselves otherwise. We have known men in certain public offices who were paid for "extra service" of this kind. Our Corporation is a model one, and is never behind the age in speculation, though it may and is in efficiency.

One of the most novel introductions into the departments of the Town Council is the *loan* system. Needy officers may receive sums in advance of their salaries by way of loan, as some distinguished officials from time to time are not too proud to be under an obligation to the City Accountant. It would not be a bad idea if the Corporation carried out the loan system on a large scale, for the purpose of netting some money; but as they are in want of a loan themselves, they are unable to oblige any one except on the principle of robbing Peter to pay Paul.

We will look again into this Borough Account, for it is amusing as well as instructive, and highly suggestive.

ARCHITECTURAL ASSOCIATION OF IRELAND.

THE closing meeting of the session 1872-3 was held at 212 Great Brunswick-street, on Thursday evening, 26th ult. The chairman on the occasion was J. J. O'Callaghan, Esq., F.R.I.A.I., President.

The minutes of previous meeting were read and confirmed.

Mr. R. C. Millar read a paper on "Leveling" (which we print on another page).

A ballot for election of officers for ensuing session took place, with the following result:

President—J. J. O'Callaghan; *Vice-President*—W. M. Mitchell. *Committee*—C. H. Brien, T. H. Longfield, D. J. Freeman, R. S. Swan, J. L. Robinson, G. C. Henderson, W. Butler, W. G. Doolin, R. D. O'Brien. *Treasurer*—D. J. Freeman. *Librarian*—W. G. Doolin. *Auditors*—J. Holmes, W. Fennell. *Hon. Secs.*—J. H. Longfield, J. L. Robinson.

The association has creditably passed through its maiden session. We hope that with an accession of new members during the next session, and increased zeal on the part of those already enrolled, this association may rival its namesake on "the other side." For the position in which it is now placed as the rallying point of the architectural profession, it is only right to acknowledge the great services rendered by the honorary secretaries in organizing it—services, no doubt, considered by them as a labour of love, and for the honor of their profession.

FUEL RESOURCES.

Mr. Allan MacNab, of Limerick, writes to a Northern contemporary respecting our turf industry in general, and his own endeavours in developing that industry on a tract of bog land he occupies. We presume from, his name, Mr. MacNab is a Scotchman by birth or descent, and consequently possesses some of the characteristic shrewdness of his countrymen, who avail themselves of an opportunity when it presents itself—a virtue for which they should be commended. Mr. MacNab says:—

"I have followed the business as explained in Mr. Meadows' paper, for years, and from experience I can speak as to its value when carried on as a special industry. Our cutting season commences March 1st, and ends in July. All the available hands about the country are employed; there is work for all, men, boys, and girls; each have their different work to do. Our fuel is of the first quality, and is very much sought after in the county and city of Limerick. Every attention is paid to the cutting and drying of it, and it is delivered to the customers in sound, good condition. Our price last season was about 6s. 6d. per ton on bog; this year it has increased to 8s. 6d. and the demand far exceeds the supply. The winter months we turn the men to the reclamation of the cut-away portion of bog, and convert it into good land for tillage and pasture. A great deal has been written and said about manufacturing peat fuel by machinery. I have closely watched, and myself tried experiments, and I can see no way so cheap and simple as the mode which I am at present working."

We have discussed the subject elsewhere in our columns, and we repeat now, that success is only obtainable by carrying on turf-cutting and saving operations as a special and systematically-worked industry.

MEMORIALS OF OLD ESSEX BRIDGE.

[Being Extracts, with Notes, from the Diary of George Semple, Architect.]

HAVING constructed his coffer-dam, cleared for the foundations, erected his piling and pumping engines (concerning which he gives details and plans), he thus writes on the threshold of his operations:—

CALCULATIONS AND RESOLVES.

"Having now, to the utmost of my power, fully considered everything relative to this work, I sat down, and by the assistance of my brother John made an estimate of the expense—supposing the balustrade to be made of fire stone [granite]—and we found it amounted to twenty thousand pounds; and I promised that I would not exceed twenty thousand five hundred for incidents; and I computed that within or about the space of two years from the day upon which I should stop up the old bridge, that a safe road might be made over the new bridge for carriages, and upon these calculations, and on mature deliberation, I made the following declaration, not only to the overseers with whom I treated, but also promised the Lords Justices, to the Committee of the House of Commons, and to the public in several papers, to this effect:—1st. That I would build them a bridge that should stand as long as a little adjacent mountain called Sugar-Loaf hill; 2nd. That the expense should not exceed £20,000; 3rd. That I should have a road opened for carriages over it within or about two years from the day of my stopping up the old bridge, as above mentioned; but I did not otherwise bind myself to the performance of them, as though I had engaged for them under my hand and seal, and staked any little reputation I had acquired faithfully and effectually to perform them to the utmost of my power."

THE DEMOLITION OF THE OLD BRIDGE.—THE DIARY.

"We began on January 19th, 1753, to stop up and demolish the bridge, and take down the equestrian statue of King George I. which had been put up in 1722. February 19th we drove the first pile of the coffer-dam.

"In pulling down the bridge we began at the south, and took in the largest half of it, in order to open and deepen that side to let the whole current run there. In doing this I found it necessary to make a temporary dam to turn the river north, in order to lengthen the time of ebb, and clear away the old ruins, &c. After this dam was made we were going on very successfully till the 28th of April, when there came down a pretty strong land flood which obliged me to take the men off that part of the work. I then stood on the northern part of the bridge, dreading the fate of our poor little dam, when I espied the water within side of it grow very black, the cause of which I knew to be the blue clay bursting out, and I hurried down to it in order if there was any possibility to save it; but the very moment I had got on the top of it I found the whole to rise under me, and had not above a second of time to save my life, for the floor that was on the top turned immediately down, and the points of the piles rose up, and notwithstanding the activity of the men a great part of it was carried down the river. But this fright was much use to me, for as the cause was the floods getting in under the clay, I was ever after on my guard by making our great dam in such a manner as might resist the force of any land flood or torrent.

"May 31st the last of the piles of coffer-dam was drove, and June 4th we began to fill the clay into it; and the same day, having taken up all we could of the foundations, we began to deepen by dredging."

[Semple's first experience in the use of coffer-dams was calculated to impress him with caution; and he seems to have profited by the little fright he received on the occasion of the incident he relates. Land floods or freshets in the Liffey were stronger in former

times than they are of late years, and often occasioned much injury. Our architect's work was looked on by the Dublin public as a bold experiment; and among the sight-seers and visitors there were many who volunteered opinions and advice but little calculated to inspire the architect with confidence had he been of a timid nature. He proceeded with his work, however, gathering experience as he progressed, equally careful of the safety of the workmen engaged as of the work they were engaged upon.]

THE OLD FOUNDATIONS.

"The foundations of this bridge, or rather the piers of it, as before mentioned, were built after this manner. They made frames of oak of 9 or 10 inches scantling, the exact shape of the pier, with rough two-inch planks of oak dovetailed across it in every three or four feet, and pinned to the frame, and on these planks they stretched other planks lengthways, but not so thick. These frames so made they dragged to their berth, and let them rest upon the natural surface of the bed of the river. The piers being extremely gross increased the rapidity of the water between them, and the bed of the river (as you have already seen) being sharp gravel, the floods swept it down as before-mentioned; and indeed the only thing surprising is, that it stood so long.

"Now I am come to one particular circumstance which I recommend to your serious attention, as I shall endeavour to draw some useful inferences from it. After we had got some of these frames taken up, particularly the third, we found under the inner part of it a smooth floor of clean, sharp gravel, hard and firm under our feet; but when we thought to go on with filling the floats with it to carry it away, as we had done in the bed of the river between the piers, we found it very hard, and as the shovel could not move it we tried the pick, but when we got a little further into it the pick made little impression upon it, and when we got further into it, we found that we had no other way to break it but by undermining it, and then break it off in pieces with the largest sledge we had. The middle of it was an actual petrification of about a foot thick, but not so hard in the bottom as in the top. Some of the piers were much more petrified than others, and particularly this, as being better guarded by the base of the effigy [George I.], and having imbibed the petrifying qualities that soaked from it. The grit or grain of it greatly resembled that of a mill-stone, but the colour was just the same with the bed of gravel it lay upon. Where the gravel partook of mud, the pier that lay on it was not so hard; and those piers did not petrify at all that lay on beds that were not gravelly."

[On June 8th the sinking for the north abutment of the bridge took place; and in commencing this portion of the work the architect had some fears, as there was a great depth to sink and very little room to sink upon without depriving the public of the use of their carriage-way. A plate is given representing the method he took to keep up the heart of the bank,—loose-made ground 30 feet high on only 10 feet of a projection.]

"When we had got down to about the third stage, or a little under low water mark, we had all above us composed of various sorts of made ground; but from and about that level we found the ground began to incline to sandy blue clay, sometimes mixed with shells and sometimes with leaves, which we took to be bay leaves, all of which we concluded had in former times been left there by the sea and river, because we got in it a small tree almost rotten, with some branches still upon it. At the butt it was about 4 inches, but no one could tell what sort of wood it was of; from all which I concluded that I did not raise any fresh or natural earth."

[As the Liffey is an embanked river north and south, and as the greater part of that embanking took place since Speed published his map in 1610, it is easy to see that Semple in constructing his abutments had some difficulty to contend with from the nature and

depth of the loose made up ground. Bachelor's Walk, Ormond-quays east and west of Essex bridge, Inns-quay, Arran-quay, and other portions of the riverside, according to Harris, to the extent of above 5,000 feet, were overflowed with the tide, and covered with ooze, far into the seventeenth century.]

"AN EXTRAORDINARY DISCOVERY."

"Having got some part of the north end of the pit sunk down to about ten feet beneath low water mark, and quite free from water, except some small quantity that soaked from the bed of the river, which was then about the same space above us, and that we conveyed into the S.E. corner for the screw-pump, the men that were sinking for the land abutment perceived one spot in the ground that grew very wet, but did not much regard it; but in sinking the next spade, which was about a foot deeper, when they had laid open the wet spot we were all greatly alarmed by the very strong boiling up of the water just in that place. I immediately sent for my book of borings, and found that wet spot was boring No. 23. I immediately called for one of the boring pipes, and had it drove down to the rock, and the top of it $3\frac{1}{2}$ feet above that floor, on driving of which the boiling entirely ceased. This gave us some spirits, and the men went on with their sinking that floor; but at this time the tide was at ebb, and when the next tide rose to about six feet, it began to boil over the head of the pile, and increased in force as the tide rose, and so greatly wet the work that we found it advisable to plug up the pipe; and so we continued to hurry on the work without taking any further notice of the boiling, except looking on our jetteau as a matter of curiosity, which during the time of high water, and after it, when we would pull out the plug, would play upwards of a foot above the head of the pipe with great force.

"The Rev. Dr. Hudson, who was a very curious and constant observer of our proceedings, came to the work the next morning, and I brought several other gentlemen to the work to see our curious jetteau. He called for a glass, and they all tasted, smelled, and attentively observed its colour. They then dropped a piece of silver into the glass, which was soon turned to a dark yellowish colour; and at length they all concluded that it was a mineral spa, and advised me to send immediately for Dr. Rutty, for whom I went myself, and he cheerfully came with me, the gentlemen waiting for us. He tried all the before-mentioned experiments, and acknowledged that it seemed very like the water of Swallingbar, but concluded that any seawater that partook of putrid water running from a foul sewer might have the same effect that had, and he desired me to send some of it home with him, which I accordingly did."

"This affair engrossed my whole attention, and put me upon making the following experiment. I then had two other similar pipes drove at ten feet distant from the east and west, and I bored them in like manner at low water; and as the tide came in I found the water rise in all the three pipes exactly alike, and at or soon after high water they all played together when we took out the plugs, near a foot above the head of the pipes which were all on a level, and as the tide fell they abated in their force, but never sunk lower than the tops of the pipes, which was, as I said before, $3\frac{1}{2}$ feet higher than the bottom of the pit, and consequently $7\frac{1}{2}$ under low water mark.

"The next morning Dr. Rutty and Dr. Hudson came to the work, where they met the gentlemen that were there the day before, and he, Dr. Rutty, then assured us that it was no species of spa water, but he believed a large body of subterraneous water that ran along the surface of the rock, and communicated with the sea water, and partook also of the foul waters of the bed of the river and the sewers. He then produced us as much salt as would cover a shilling, which he said he had extracted from a pint of that water, which was not near so much as a pint of sea water would produce, and concluded with

giving me this friendly and useful caution:—'Take great care that you do not let that water break in upon you, for if you do you will never conquer it.'

[Sample's reasons for adopting the advice of Dr. Rutty, as given in his own words, appear cogent enough considering the difficulty he laboured under in preparing the foundations of the northern abutment. It is not likely in these days, however, that a small jetteau of water would deter one of our leading engineers from reaching the solid rock. We must, however, consider the mechanical appliances of these days compared with those in which George Sample lived,—when almost everything devolved upon the pioneer to construct, and when precedents were few, and methods unreliable.]

"This opinion of Dr. Rutty corroborating with my own, it was instantly circulated among all the men on the works. They all unanimously joined in exerting themselves to the utmost of their abilities; for that water alone was not the cause of our anxiety, as we were at that time thirty-one feet under the surface of the pavement, which was within ten feet of being perpendicular over us, and all of made ground, with a fine sandy bottom, which notwithstanding all the precautions we had taken in sinking and shoring up our breastwork, we well knew that if the smallest quantity of water should then get into the pit it would most assuredly sap and soften that fine sand, which together with the continual shaking of the ground by the carriages, would render it impossible for us to prevent its bursting in upon us, and in all probability pull in the corner house along with it." [The house at the corner of Capel-street, opposite the bridge.]

"Hereupon we agreed that it would be the best and safest for us to desist from sinking any deeper, though it was no small disappointment to us, as we then had thought of going down to or very near the rock; nor otherwise had we any difficulty to encounter in accomplishing it, for the floor we were then levelling and clearing out next to the bank was perfectly free from water, except that little sprang up with the three pipes; but remembering Dr. Rutty's caution, which I knew to be well founded, I proceeded with all possible expedition to make the masons secure the bottom of the breastwork."

[Dr. Rutty, alluded to above, was a well-known Dublin celebrity of the last century. He published in 1752 a "Synopsis of Mineral Waters," which Dr. Lucas, another well-known worthy, severely attacked in his "Analysis of the Synopsis." The work, however, by which Dr. Rutty is best known is his useful "Essay towards a Natural History of the County of Dublin," published in 1772. He wrote other minor works, medical and moral, but they are little known. Rutty belonged to the Quaker fraternity, and in his day had an extensive practice. He was a very industrious practitioner and writer. His Natural History essay in relation to Dublin was undertaken at the request of the Physico-Historical Society then in existence, at the head of which was Lord Chancellor Jocelyn. The impulse given by this society, and the publication of Rutty's works, led to some other natural and civil histories.]

(To be continued.)

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

JERPPOINT.

THE remains of the Cistercian abbey of Jerpoint are situated in the barony of Knocktopher and County of Kilkenny; they stand about one and a-half miles from Thomastown, and may be seen about half a mile from the railway station, on the right-hand side of the line going to Waterford. The situation of the abbey is rather bare and uninteresting, and could at no period

have been either picturesque or pleasing to a refined, nature-loving taste. Like most of the great religious foundations in Ireland, its annals are few and unimportant. Though erected after the Anglo-Norman invasion, it owes its existence to a native prince, being founded in A.D. 1180, by Domhnal Uí Dunchadha (Donald O'Donoghue), King of Ossory, and dedicated to the B.V.M. This monarch richly endowed it with grants of land and various privileges, and, dying in 1185, was interred in the abbey church.

King John confirmed all the endowments made to this abbey by the native chief, and conferred on it additional grants and privileges, which are recited in Archdall's *Monas. Hib.*, which also supplies us with the following records:—

"1202.—This year Felix O'Dullany, bishop of Ossory, was interred on the north side of the high altar; many miracles are said to have been wrought at his tomb.

"1266.—William, a monk of this abbey, was bishop of Cork.

"1300.—William Schouldham sued the abbot Lawrance for three carucates of the land of Kilru, near Dunfert, granted to the said William, by Peter, who had lately been abbot of this house.

"1356.—This year the abbot Phillip was accused, that he, by force and violence, had expelled Thomas abbot of Tintern, from his said abbey, and had also imprisoned Walter de Weysford, prior, and Thomas Scurlog, sub-prior of the same, together with divers other monks of the said house, and at the same time did rob the said prior of three horses, value eight marcs. The said abbot was also accused, and tried in the following year for repeating his insults and felonious outrages upon the abbot of Tintern, but of this he was acquitted by the jury.

"1375.—This year the abbot by petition to King Edward 3rd set forth, that his house was a dependant upon the abbot of Baltinglas, who did use to attend parliaments, and make answer for those abbots dependant on him; nevertheless the abbot of Jerpoint was often compelled, by writ, to appear in parliament, to his particular loss and distress, and to the great expenditure and costs of his house; he therefore prayed, to be exempt for the future from this his inconvenient attendance; the king did thereupon by writ, dated at Kilkenny October 28th (where a parliament was then held), exonerate him from all and every such attendance.

"1380.—It was enacted by parliament, that no mere Irishman should be permitted to make his profession in this abbey.

"1529.—Maurice, son of Thomas Earl of Desmond, was interred here."

The last abbot of this house was Oliver Grace, who surrendered it and its possessions on the 18th March, 31st King Henry VIII. In the instrument of the abbey and its appurtenances are thus described:—"A church, belfry and cemetery, an hall, six chambers, a kitchen, dormitory, granary, two stables, two gardens, a park and sundry other closes, containing three acres, within the precincts of the abbey."—(*Monas. Hib.*, p. 357.)

THE ABBEY CHURCH.

The church is on a similar plan to that of the abbey of Boyle, consisting of a nave with aisles, a central tower with transepts, and a chancel with two chapels east of transepts. The building is of various dates, ranging from the twelfth to the fifteenth centuries, and has some peculiarities. A considerable portion of the original fabric exists, most of the later work being insertions, excepting the tower, which appears to have been rebuilt nearly from the foundations. At present the exterior of the church has but a poor appearance, if we only except the west front, which has a very fine semicircular-headed triplet with a good external label continued as a string across the piers and quoins; in the apex of gable is a small lancet of the same form.

The nave is in length 107 ft. 6 in., and in breadth 27 ft. between the arcades. It had no western entrance, as Boyle, Dunbrody,

and other examples; the present one is a plain pointed ope in the north aisle. Each arcade consists of six bays; the piers are alternately round and square; the former are 3 ft. 4 in. diameter at the shaft, the latter the same dimensions square, and are chamfered on the arrises. The piers are low, being but 7 ft. 6 in. high, in the shaft; the bases are moulded, on square plinths; the caps of the scalloped pattern, with a bold and rather heavy abacus.

The arches of north arcade are all pointed and of high pitch, perfectly plain, without moulding or chamfer, but are finished on both faces with a light label consisting of a square and chamfer. I should at once say that these arches were a reconstruction were it not that the masonry is of exactly the same class as that of the Romanesque portions; and also that over each is a range of clear-storey windows, semicircular-headed, and to all appearance of the date of the original work. There is but one pier and one arch of the southern arcade standing—that adjoining the tower; the north arcade is perfect.

It is no doubt unaccountable that the builders of this church should have placed such light Pointed arches over low massive piers of a distinct and different order, and again, above the Pointed work, windows of a different type. The point is difficult to determine, as such anomalies are often met with in other churches.

The south aisle wall is entirely gone, but has been rebuilt in the late reparations, as a mere protection to the building. The wall of north aisle is of a late mediæval date; there are three window-opes of different dimensions and of plain fifteenth-century character; the present entrance is a rude modern affair. In my restored plan of this church I have shewn the aisle windows as they originally were. The aisles measure 107 ft. 6 in. in length, and 11 ft. in breadth, in clear, so that the entire width of the church was 55 ft. 8 in.

The tower is central, and, as usual in these churches, of massive dimensions. It is 32 ft. square, out and out of walls; it rises from four high-pitched Pointed arches, which spring from massive piers; these arches have each a chamfered sub-member, which rests upon moulded corbels. The groining under tower is perfect; the groin-ribs, a square and chamfer. It rises but one storey over the nave roof, and has a small perpendicular two-light window in each face; it is crowned by a parapet, crenelated in that picturesque manner peculiar to Irish towers.

The chancel measures 27 ft. 2 in. from N. to S., and 20 ft. 9 in. from E. to W. The east window is of three lights, with decorated tracery, much damaged; the spaces between the mullions are unusually wide for a window-ope of such moderate dimensions, being 8 ft. 2 in. The internal jambs and arch are enriched on the angles with a hollow and the ball flower; under the sill is a string-course, consisting of a square and chamfer. The original window was a semicircular-headed triplet, portions of which are to be seen in the exterior of the east gable, built up; the reveals and arches were enriched with chevrons. Portions of a string-course also remain of the same period, having a toothed ornament.

The chancel is covered by a plain Pointed vault. In the south wall is the original sedilia, the piers and arches of which are enriched with chevrons; close to which is a double recess, divided by a short central shaft; it is not a piscina—was probably an ambrey. At the same side is a small two-light window with ogee arches under a square head.

The north transept measures 28 ft. 6 in. from N. to S., and 25 ft. 6 in. from east to west; in its north gable are two semicircular-headed window-opes, one over the other, and another in the west wall. There are two chapels at the eastern side of this transept, each measuring 10 ft. 6 in. by 8 ft. 6 in. in clear, and having plain pointed vaults. They are connected with the transept by pointed

arches springing from piers having angle-shafts, which are finished with convex flutings; these piers have very richly-carved capitals of Romanesque character. The arches were finished with labels, one of which has the nail-head enrichment; in each is a two-light decorated window, the mullions of which are gone. All the chapels are covered by pointed vaults.

The south transept is of the same dimensions as the north, as are also the chapels, which are constructed in all their features similar to those of the north transept. The masonry of the original portions of the church is of admirable character, the walling being of well-dressed rubble with few spawls; the quoins, window-dressings, piers, and arches being of a fine-grained freestone resembling Caen stone, very neatly dressed and fitted; the columns and piers being built of small stones in courses of from 7 in. to 12 in. high; the later portions of the work are of limestone, both walling and dressings, the workmanship being of very inferior quality to that of the earlier work.

The conventual buildings were, as usual in Cistercian houses, at the south side of the church; at Jerpoint they appear to have been extensive, as considerable remains of them exist, though in a state of great dilapidation, confused masses of rubbish and masonry rendering it almost impossible to plan out and properly appropriate the various parts.

In the year 1853, the indefatigable secretary of the Kilkenny Archaeological Society organised a subscription, for the purpose of arresting the dilapidation to which the abbey remains were exposed. By the liberality of local friends and members of the society, and the generous assistance of Mr. J. G. Robertson, architect, several important repairs were effected, and the abbey church perfectly enclosed and protected from future injury.

THE FREE OPENING OF "THE METAL BRIDGE."

It is time that the bridge called by above name, though christened Wellington Bridge, should be opened free to the public. It is fifty-six years since it was erected by private individuals, who held the right as lessees of the Corporation of Dublin, to which body a yearly rent of over £300 is still paid. The lease was originally granted for the ferries on the Liffey, but it also conferred powers to construct a bridge on its present site, and which was then only a ferry station. It cost nearly £5,000. A halfpenny toll is still exacted from foot passengers. Its lessees have had a large return from their monopoly; and we venture to say that the original cost has been paid several times over with exceeding satisfaction and profit. The expense incurred in keeping the bridge in repair has been small, the chief items being for occasional paintings. We are not aware that the original promoters acquired an everlasting right to span the Liffey by this or any other structure; but we acknowledge their right to receive a moderate compensation for surrendering their present rights, so that the bridge may be thrown open to the public. Let a statement of receipts be submitted to the Corporation, extending over the last ten or fifteen years, and let there be a valuation struck on that basis. The cost of freeing the bridge will not be a heavy item on the city; hundreds of pounds are annually expended upon objects in no way to be compared to the usefulness of freeing this bridge. Had proper judgment been exercised in preparing a temporary bridge to substitute Essex Bridge during its rebuilding, we would have been spared the present confused agitation upon the subject of another

temporary bridge higher up the river. Arrangements might have been made with the lessees of the Metal Bridge to accommodate the passenger traffic, while the vehicular and passenger traffic at another point could be amply accommodated without the necessity of another temporary erection, which would probably cost the city more than the bargain that might be struck with the Metal Bridge lessees for the temporary use of their bridge. There are some of our traders and professional men who are never satisfied. Some of them would seem to want a bridge across the Liffey at every fifty yards distance. These are a class of worthies for whom the Dublin "Jarvie" has no blessings; they live in restraint of trade, in the opinion of one class of our people; while in the opinion of another class—who thrive by new jobs—these second class of persons exist for the good of trade in general, and themselves in particular.

This aside, the question of the free opening of the Metal Bridge is a pertinent one. A toll-bridge upon the Liffey is not only a mistake and a mischief, but it is a barbarism, for which there can be no excuse. Public authorities everywhere are freeing their public bridges. The Metal Bridge, as a toll-bar, should have passed away years ago with the turnpikes.

The Port and Docks Board, who are the custodians of the other bridges on our river, should make an effort to purchase up the interest of the lessee in this bridge. They would, no doubt, be assisted in the movement by the Chamber of Commerce as well as by the mercantile houses on the north and south sides of the city which would be benefited by its free opening.

ON LEVELLING.*

LEVELLING is the art of ascertaining the upper boundary of any section of the earth's surface, and thence determining the several heights of any number of points on that boundary, above or below an assumed line, called a level line, which in reality is a great circle of the earth. If the earth were a perfect sphere covered with water, unaffected by wind or tide, the surface of the water would trace a surface parallel to the horizon in every direction, all of which would intersect the earth's radii at right angles. The tracing of such lines on the earth's surface would be setting out level lines.

The practice of levelling consists of ascertaining the difference in level between any number of places, whether in a straight line or not. I shall first describe the construction of the dumpy level, and then its application to field work. The dumpy level is that principally in use; the V-level and Houghton's level are larger and not at all so portable. You will see that the dumpy level consists of a telescope, the tube above carrying the spirit with the air bubble. This tube should be of a large size. A small mirror and cross level attached on the top, and a compass box under the telescope; this is screwed on to the axis of the instrument, with the parallel plates, and then to the tripod stand, as in the theodolite. The telescope carries a diaphragm, consisting of two vertical and one horizontal wire. The object of the mirror, mounted on a hinge joint and fastened to the telescope by a clip, is for the observer to see at the same time that he is reading the level staff, through the telescope, that the instrument has remained steady in its position by noticing in the mirror any alterations in the position of the bubble with regard to the divisions engraved on the glass tube. The small cross level is to assist in setting up the instrument

approximately by means of the legs only, which occasionally saves time as well as wear to the parallel plate screws. The cross level, which is generally put on by the maker, is frequently never used; its use greatly depends on the construction of the level with regard to the parallel plates. The mirror is most useful on springy or boggy ground, and it is most essential in windy weather, as the observer may, by keeping the mirror in sight while observing, detect the slightest disturbance. The instrument is so constructed that the diaphragm to which the wires or rather spider lines are attached can be adjusted by means of the capstan-headed screws near the eye end of the telescope.

The lens attached to the compass box is for reading off the graduations on the silver ring, divided to half degrees. Adjustment of the telescope for parallel. Move the object glass till distant objects and the cross view of the diaphragm appear clearly defined. Adjustment for collimation, or optical axes of the instrument, ought to be in the line joining the centres of the eye and object glasses.

In looking through the dumpy level all objects are inverted, that is, seen upside down. This appears strange at first, but after a short time it appears all right. The figures on the staff are read downwards instead of upwards.

Correction for curvature for one mile equals 8 ins.

Refraction, optical deception, arising from the state of the atmosphere, taken generally at one-seventh of the correction for curvature, added to curvature.

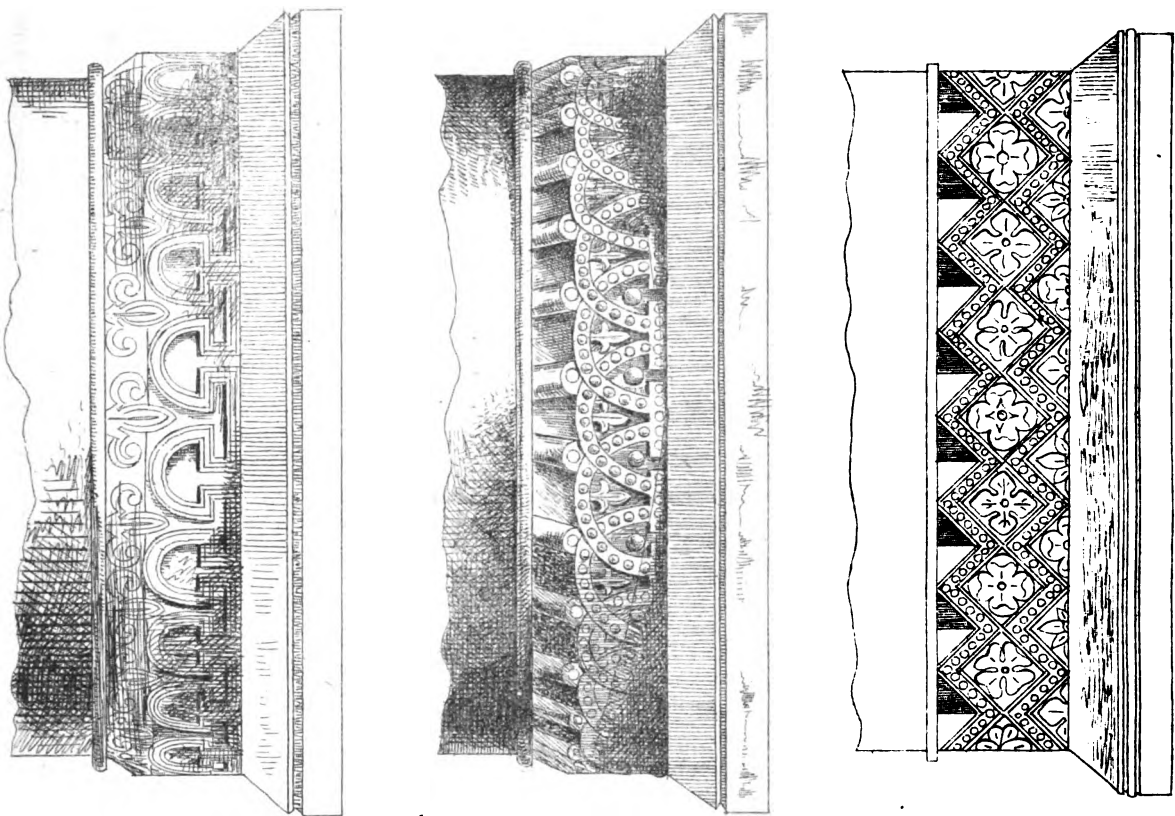
Levelling staffs generally vary in length from 14 ft. to 17 ft., and consist of three joints; the feet are divided into tenths and then into hundredths. It is a great object to get the divisions in the staff as plain as possible.

Having now given a description of the level and levelling staff, I shall briefly describe the practical working of the level. Level books, in which the notes are taken, are of different kinds; one of the best is that ruled for seven columns on one page, the opposite page being left for observations—1st column, back sights; 2nd, intermediate sights; 3rd, fore sights; 4th, rise; 5th, fall; 6th, reduced level; 7th, distance.

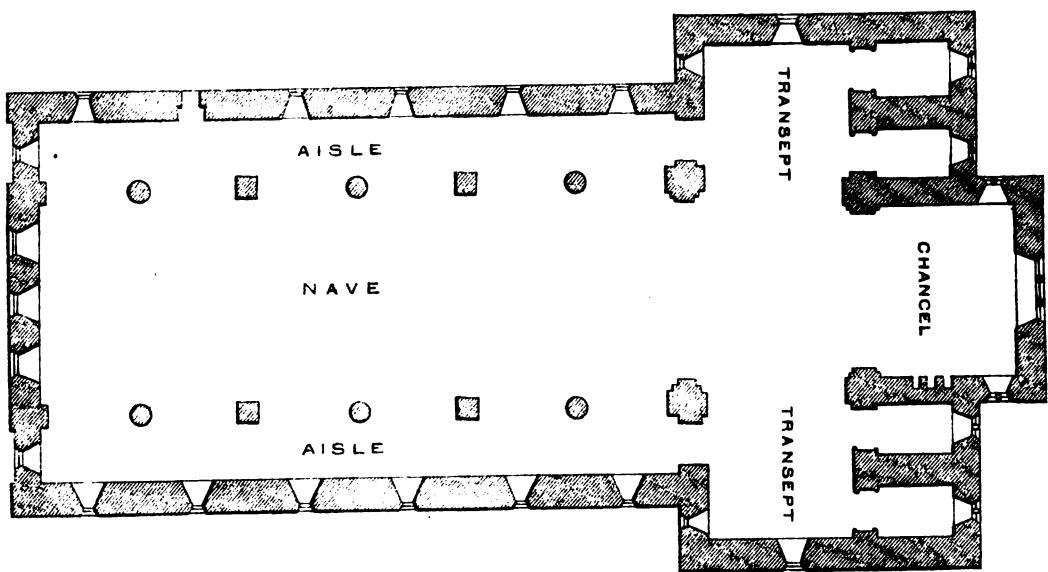
Suppose we want to ascertain the difference in level between the points A and H on a road. In order to make a section of the ground, showing the fall from A to H, let the levelling staff be held upright at A; let the observer proceed with his level down the road till he judges by his eye that the level, when set up and levelled, will intersect the staff at A; without practice it is hard to judge the right distance to go; frequently the level is got up and levelled, and then found to be either above the top of the staff or below the foot of it, as the case may be. The instrument should be set up roughly at first, to see that all is right, and then levelled perfectly. Some levels take much longer levelling than others; it depends principally on the description and of parallel plates attached to the level. When the instrument has been levelled, turn the telescope round to the staff at H, and adjust the eye-piece for distinct vision, so that the wires of the diaphragm may come out clear and sharp on the staff. Once the eye-piece is adjusted, it generally remains so the whole day, except for long sights. The focus of the telescope has to be adjusted with the mill-headed wheel attached to the side of the telescope working on a rack. The staff should be observed between the two vertical wires of the diaphragm. Look at the bubble to see that it has not moved, and then read off the staff where the horizontal wire in the diaphragm intersects it, which will be 2.90, and this is entered in the note book, when we should again look at the bubble to see that it has not stirred from its central position. Signal the staff-man to go to B, where next observation is to be taken. The height of the instrument can be taken in the meantime, or the distances chained. Now reverse the

* Paper read by Mr. R. C. Millar, at meeting of Architectural Association of Ireland, June 26th, 1873.

CAPITALS FROM THE
ABBEY CHURCH
OF JERPOINT



JERPOINT
CO



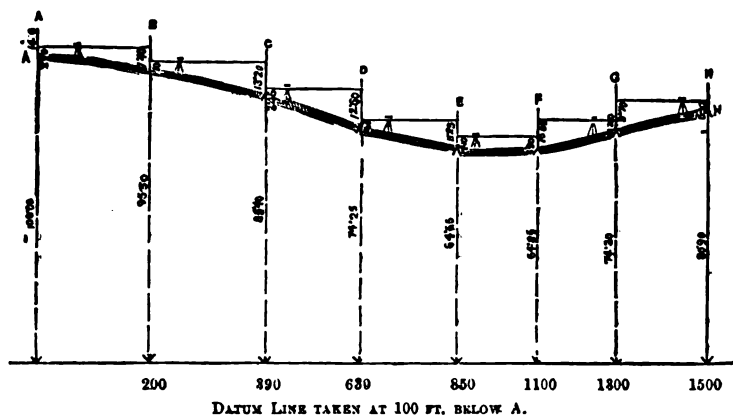
ABBEY
KILKENNY

SCALE



THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

SECTION SHEWING A FALL IN GROUND FROM A TO H OF 19.10.



telescope so as to bear on B; adjust the telescope, examine the level to see that the bubble is in the centre, correct it if necessary by the screws in parallel plates, and read off the staff at B, which, say, is 7.40. The difference between the reading of the staff at A and B is 4.50, showing a fall of ground of that number of feet. The difference of level between B and C having been found, we have now to find the difference between A and C. The level is set up beyond B, the observation of the staff at B taken and noted down, then the telescope is reversed, and the staff-man having erected his levelling staff at C, the height is taken where the horizontal wire cuts the staff, and the rise or fall as the case may be noted in the level book, and the reduced level put down, which is the exact height of the ground above or below the datum or horizontal line. By casting up the column of reduced distances we obtain the total difference between the first and last of any number of observations that may have been taken: also that by adding up the column with the observations, back and foresight, and subtracting the lesser from the greater we obtain the same result. Also the difference between the columns "rise" and "fall" give the same result.

The operation of taking out the differences of level at each reading and entering them in their respective columns is termed casting out, in doing which the principal thing to remember each time is, that when the back sight is greater than the fore sight the entry is made in the column of rise, and when the foresight is the greater then the difference is entered in the column of fall.

At all times the differences of the totals of back sights and fore sights are equal to the differences of the totals of the columns rise and fall. The tottings up are checks on the accuracy of the casting out.

Intermediate sights are cross levels taken in order to obtain a section through the main line of levels.

Bench marks are fixed heights from which to start or check the levels taken, as in going over some miles of levels for a section it is indispensable to have some fixed heights to which to refer at any future time; they consist of levels being taken to fixed heights, such as the sill of a particular door or window, the coping of a wall, lock of a gate, or root of a tree, where the bench is cut to receive the foot of the levelling staff. Bench marks should not be at greater distances than a mile apart along the line. It is not necessary to have them directly on the line of levels; however, they should not be too far off, and ought to be in such a position as to be readily found. Without such marks we should have to look for the exact spots on the surface of the ground where the staff had been held, and no reliance could be placed on anything of the kind in such an important matter as that of a level, where a few inches are certain to be more or less of great importance. But if, at the same time that the levels have been taken over a line of country, levels have been taken to a number of fixed points, then we have so many defined points over which the levels may be again taken,

and by such means the accuracy of the former levels may be at any time checked. Bench marks should be left at every point along the main line of levels, where afterwards it may be intersected by a series of cross levels. The distances of the bench marks from the main need not be measured, nor is it necessary to take the bearings of them.

In setting up the staff for observation, with its face towards the observer, it should be held firmly on the ground, and perfectly upright. The staff-holder should take care not to put his fingers across the face of the graduations. On sloping ground the staff is apt to be held out of the perpendicular, and not set parallel with the vertical wires of the diaphragm. Care should be taken to keep the foot of the staff perfectly clean; if this is not attended to, in going over soft ground the earth or clay sticking to the staff may make a difference of an inch or so in the levels.

The accuracy of the chaining in setting out a line of levels is most important; an error in chaining may vitiate a section as much as an error in levelling—it may cause the total length to be wrong, or a reduced level to be shown in the wrong place.

Levelling with the theodolite is sometimes necessary over steep or almost perpendicular rocks, when an ordinary level could not be used.

Mr. Millar then proceeded to state, that in plotting the levels it was usual to draw the vertical heights to a far larger scale than the horizontal distances—the vertical scale being from five to twenty times greater than the horizontal. This is done to show the undulation of the ground with greater distinctness than it could be shown if all drawn to the one scale.

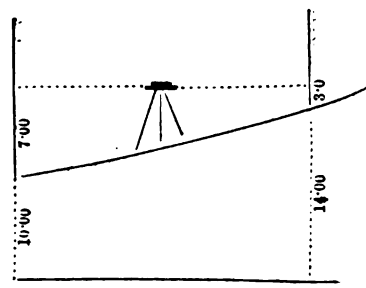
LEVEL BOOK.

Back Sight	Inter-mediate Sight	Fore Sight	Rise	Fall	Reduced Level	Distance	Remarks
2.90		7.40		4.50	95.50	200.0	Datum line 100 ft. below A.
1.10		13.20		12.10	83.40	390.0	
3.45		12.40		9.15	74.25	630.0	
1.65		11.25		9.60	64.65	850.0	Bench mark at A.
4.10		8.90	0.20		64.85	1100.0	
0.05		1.20	9.45		74.30	1300.0	
19.70		8.10	6.60		80.90	1500.0	
33.55		52.65	16.25	35.35	100.00		
		33.55		16.25	80.90		
			19.10	19.10	19.10		

Mr. John Longfield, C.E., said that he found from long experience, both in this country and America, that the levelling note-book can be kept more clearly and satisfactorily than by the system generally adopted, which has been so ably explained by Mr. Millar. The description of book he referred to dispenses with the usual series of columns, having only three, properly speaking, actually necessary to give the "reduced level" at any point on which a reading of the staff has been taken, others being only introduced for "distances," "bench marks," and "notes," as arranged for the convenience of the operator. The three columns he defines:—1st, "staff;" 2nd, "reduced level;" and 3rd, "height of plane of collimation above datum." All "readings," no matter whether "back,"

"fore," or "intermediate," are entered consecutively in "staff" column as taken, the only precaution necessary to be invariably observed being, before moving the instrument to draw a line across the three columns, under the last "reading," otherwise the entries are useless. He found this method most expeditious, and never, after some practice, to fail in satisfactory results. The "reduced level" column, as the name describes, contains the "surface" or "bench mark," heights above the "datum line," and the "collimation" or third one, gives that of the axis of the instrument also above the same. In proceeding with the operation of "making up" the level book after the readings have been taken, it is necessary to enter the assumed height of the starting point above datum, being either "surface" or "bench mark," as the case may be, in the reduced level column, opposite the staff reading taken upon it; then by adding these together, the sum obtained is to be entered in the "collimation" column. The subsequent readings, no matter how many, taken before shifting the position of the instrument, are then to be subtracted from this sum, and the remainders entered in the "reduced level" column, giving the various heights in all cases above datum from which the section is "plotted." On arriving at the line drawn across the columns (previous to the shifting of the instrument), the last reduced level entered above it is to be brought down and added to the next staff reading taken for the "filling in" of the "collimation column," proceeding as above described by him with the subsequent readings for ascertaining the height of the points on which they were taken, to be entered in the "reduced level" column, as shown by the following example:—

Staff	Reduced Level	Height of Plane of Collimation
7.00	10.00	17.00
8.00	14.00	
2.00	15.00	
5.00	12.00	
9.00	12.00	21.00
5.00	16.00	
3.50	17.50	
	17.50	



CIVIC LYRICS.—No. XL.

THE TOWN CLERK TO THE SHAH.

By the Council I'm directed, oh mighty Persian King,
To say how much they all regret they could not do the thing
That otherwise they would have done, as would become their best,
Had not congestion in the lungs played havoc with their chest.
The Council, though divided, were united to a man
In wishing that they had the means to honour king or khan.
Among the wonders you'd have seen, oh grand and august Shah,
Are Dublin's great Main Drainage Works and Portobello Spa.
The Council hopes the next time that a Shah from Persia comes
The Public Health will not require the use of trifling sums.
Least said, the soonest mended now, for many ill perplex
Our men of ardent spirits since they gave up XX.
Farewell, oh King of Persia, "the cradle of our race";
The Council bids me say farewell, and say it with some grace:
Then here's hurrah, oh mighty Shah; hip, hip, hurrah, farewell!
The feelings of the Council none but themselves can tell!

CIVIL.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

TYRONE-STREET.

THIS once-distinguished, and still somewhat respectable, street, has witnessed stirring times. Why it should bear the name of the great English Duke instead of the famous Irish Earl, we have often been at a loss to understand. In this country, however, things go by contraries, and we are not to wonder at anything. During our recollection this street has shewn a downward progress in the character of its dwellings and their inmates; and were it not for the few public buildings of note which it contains, its decline would have been more marked.

Tyrone-street boasts one of the first nobleman's town residences built of granite in Dublin, the erection dating back to 1740. Substantial brick residences in this street date from the same period, but the Tyrone Green of our childhood is completely changed. Private dwellings in this street are few at present, in the sense of being inhabited by one family only. It is now many, many years since the lower portion of the street gave up the ghost of privacy, and took to the shopkeeping interest. Lodging and boarding houses, coffee and oyster stalls, whiskey and buttermilk, dry-grocery and green-grocery, and other grosser things are now vended here with vigour. Harvestmen and reapers *en route* from the bogs of Leitrim to the fens of Lincoln, with their stout kippeens and their hay-sheathed hooks, pass along here to the shipping; but a tithe only of the number that formerly walked the flags. Emigrants, too, in droves were to be seen once, and numbers are still occasionally to be met outward bound, with Eden-quay "man-catchers" on their trail. Poor souls! the wide watery waste is before them; but if they do not beware, wolves in sheep's clothing will talk them into taking a passage by some cheap company whose vessels are built to sink. We have known the harpies of our quays since our early boyhood, the decoy-birds of emigration agents with a smattering of the vernacular, and an assumed *brogue* to catch the soft-hearted from Athlone and further west.

Of Tyrone-street and its belongings we have many bright and black memories, but our recollections do not go so far back as the "Oldest Inhabitant," who meets us to-day as usual, and whom we shall now allow to speak.

"Tyrone-street, sir, was once a tidy and most respectable place. Notwithstanding some sad memories which I retain of its 'Whipping-Green,' I have witnessed many glorious sights here on public occasions, which I can never forget, and which have become a portion of our city's history. Fifty years ago, several rich, distinguished, and popular public and professional men lived up and down this street, and in one or two streets leading off from its head. I often wondered why that church opposite, having such a fine vista in front, and the building itself which was begun so well, was never finished. The church should have had a steeple, and it is passing strange that a central pediment was never raised above the entablature. You see there are two half pediments on either side, and the front is a composition of mixed Classic. Two pilasters and two three-quarter columns of the Composite order support the main entablature, and in the centre of the front between the columns there is a door with entablature, pediment, and side pilasters in the Corinthian style. The Corinthian entablature has no projection between the Composite columns save over the door. You see a niche on either side between the pilasters and columns, and each niche is ornamented with Corinthian pilasters and pediment. The circular wall or wing on either side of the front shews gates with surroundings in character with the style of the building. The other details are unimportant. I merely want to draw your attention to the character of the building, and to express my regret

that the architect did not carry out the original conception. This building was designed by an architect of the name of John Smith, and was begun in 1758. What was finished of it took four years. The inside of this church shews Corinthian columns supporting a gallery, and the walls round apse are enriched in the same style. The ornamentation within, as far as workmanship is concerned, appears to have been well executed. In this church, as well as in the Rotundo buildings and other old edifices in this city, there are very fine specimens of stucco work, shewing that this branch of building ornamentation reached a high degree of excellence at one time in the Irish metropolis. St. Tommy's parish originally belonged to St. Polly's, but was separated therefrom by an Act in 1749. In respect to this church, sir, an amusing anecdote is related. A Catholic undertaker, early in the present century, resided in the street near to the church. He owned a most mischievous, yet withal a very amusing goat, whom everybody liked, and used to pat. Several persons whose business lay through the street were in the habit of bringing eatables in their pockets for Nan. One day, however, the church door being open, Nan walked into the church, and before she was seen had dragged the Bible down from the reading-desk, and nibbled a number of its leaves. The undertaker was summoned for the damage done to the Bible, but he swore they might imprison him if they liked, that he would never pay one farthing. He acted on the principle of sacrificing the beast for the damage, and his pleadings were to the following effect:—"My goat, your worship, was always a most respectable goat, and always knew how to behave herself; but as she has taken to strange walks and strange ways, and to churches into which her master does not enter, let her go to the devil. You may take the beast for the damage."

"The 'Whipping-Green,' sir, was a wide, square, open space, situated on the right side of the entrance to Cope-street, as you turn your back to the Admiral's Pillar. Cope-street, though it bears that name no longer, is much improved since my early days, when it was nearly all unbuilt ground. The Whipping-Green was rendered notorious, as being the spot where culprits and rebels were publicly whipped at the close of the last and the commencement of the present century. John Claudius Beresford used to preside at some of these whippings. Watty Cox, sir, for years was in the habit of satirising Beresford in his *Irish Magazine*, and accusing him of savage cruelty in these proceedings. My father, who remembered a good deal about the matter, told me often that these whippings exhibited terrible pictures, and that often the innocent suffered for the guilty.

"Tyrone House witnessed many a gay scene and festival as a town residence. Before the subsequent educational buildings were erected around it, there was a large area of garden, and a number of aged trees. At the time the building was erected, and for many years, it was considered a most superb town residence for the nobleman for whom it was built; but the same architect who designed it, designed much better ones afterwards for other noblemen in this city and throughout the country.

"The building, compared with stone mansions erected for similar purposes in the present century, must suffer in comparison as far as style is concerned; but for good workmanship and materials, it can compete with any of them. The building is not entirely plain, as may be seen at a glance. The door shows a well-executed Doric frontispiece, of columns, pilasters, entablature, and pediment; and, centrally placed above, in the second storey is a Venetian window, in the Ionic style. A cornice runs along the front, under the windows of the top storey. The interior of Tyrone House underwent some alterations, I understand, some years since, to fit it to its present purposes. The apartments were formerly considered very fine, the best of them being in the back of the building. The joinery finishings were in the best

mahogany work, but in the old massive style. The great staircase was originally well constructed, and was of the same material as the other finishings; the floor of the hall exhibited some curious workmanship in oak. The floor was laid out in diamond-shaped pieces from eighteen to twenty inches square. This species, sir, of wooden inlaying for floors is being revived of late years in England under another name than that by which it was originally known. The system is not by any means a new one, but quite as old, if not older, than Mosaic work, Roman tiles, and tessellated pavements.

"Several years ago a high wall surrounded Tyrone House, which hid a view of it from the street; but this wall was swept away during the first improvements. The site of the house was low, there being no elevated plateau in the district.

"The Chapel—or as it is sometimes termed the Church—is a modern building, though now moderately old, for its commencement dates back to 1815. Like many other chapels and churches, it is not yet finished; for who ever knew religious institutions to be completed? What on earth, sir, would the faithful do with their donations and subscriptions if there were not holy places to finish? It is a holy and wholesome thought to keep the builders always in debt, and the workmen doing something to increase the liability, so that stricken old bachelors, pious old maids, and relenting old sinners may make bequests for the good of their souls, for the cause of religion, and the benefit of trade. But to return. The front of the chapel is heavy, though in order. It swells out with a portico of six fluted Doric columns, supporting an entablature enriched with triglyphs, and crowned with a pediment. The interior has a nave and side aisles, divided by a colonnade running round three sides of the church, and assuming a circular form at the west end. At this end a very fine white marble altar is erected, enclosed with a circular railing. The sittings and furnishings within the chapel are good, and the plaster work and scriptural representations on the ceiling are worthy of note. Among the tablets and monuments against the walls are some to cleric and public characters, exhibiting unmistakable sculptural skill. Some of them will bear scrutiny and keen examination. The side aisles of this chapel, sir, are not well suited for the hearing or accommodation of the bumbler folk, who are obliged to attend service in this part of the edifice. Poor, as well as rich, ought to have proper sitting accommodation. The statues surmounting the portico on the outside of the church are, I believe, sir, the work of a native artist, a grandson to the celebrated Edward Smyth, whose statue of Lucas, and other works, are well known. Many strange stories have been related of this artist, illustrative of his vicissitudes and frailties. Inheriting a good deal of the genius of his grandsire, but unfortunately loving strong drinks, poor Smyth was uncertain in the performance of his work. If a close watch was not kept upon him, the execution of his tasks would be long delayed. It was currently reported, that during the execution and erection of these statues, the artist had to be constantly kept under the eyes of his overseers, and drink supplied him to prevent him from wandering in search of it. The figures are very fair performances, and can favourably compare with the works of more ambitious sculptors, either in design or workmanship. They were not sculptured or put up until many years after the church was opened.

"At the corner of Rhinoceros-lane, in this street, a newspaper office existed for many years, from which, from time to time, issued several newspapers of the patriotic stamp. Some were the organs of the Liberator, and others were organs for liberation and deliberation. The founder of one was Dicky Barrett, and of another, Micky Staunton. As journalists, independent of their politics, both were somewhat clever men; and now that the grave has closed over them both, I wish to do them strict justice.

"Dicky was Dan's pilot for many years, and Micky was Dan's register; and Dicky, Dan, and Micky were bosom friends, and might be termed the 'Inseparables.' Dicky was originally a brewer, but renounced the vat, and took to brewing strong leading articles, which often got him into hot water. Micky was more cautious, and he was also more clever. He was connected with newspaper life for, perhaps, upwards of forty years; but during the last twenty years of his life he retired from active journalism, but not active life. Micky was considered always an able financier, and well-up in money matters; and his last years were spent in a public office, suited to his capacity. Micky Staunton was the author of some clever pamphlets, written during the vice-royalty of a certain well-known Lord Lieutenant of this country. These pamphlets had alliterative titles, and were remarkable for their pungency and stubborn facts. As time presses to-day, I will defer telling you of some interesting matters about these journals and journalists, and connecting associations. I have known some of them well, and I hold notes which their pens have traced many years ago. When I have time to hunt up all my old scattered papers, they will be at your service, Mr. O'Flanagan. The story of Tyrone-street is yet untold; and it will require a sequel, like some of the other streets we have already visited."

Thanking our cicerone for his generous proffer, we parted in the expectation of meeting soon again, to finish our visits in Tyrone-street, or take to the exploration of some other portions of "Unknown Dublin."

THE NEW SCHOOL OF THE MERCHANT TAYLORS' COMPANY.

THE foundation-stone of the new School of the Merchant Taylors' Company, of London, was laid on the 16th ult. by His Royal Highness the Duke of Edinburgh. The architect is Mr. Edward I'Anson, the surveyor of the Merchant Taylors' Company. The old school of the Company has existed for upwards of 800 years in Suffolk-lane, Cannon-street. The new buildings will be erected upon the Charterhouse Estate, in Goswell-street. The ground acquired consists of about five acres, and cost the Company £90,000. The new structure will occupy a site about 100 feet long by 56 feet wide. There will be a large entrance hall in the centre 26 feet wide, with schoolrooms on either side of 40 feet. On the upper floor there will be a hall 93 feet long and 50 feet wide, for the assembling purposes of the whole schools. There will be an open-timbered roof, supported on principals continued down to the floor. Externally the building will be faced with red bricks, with Portland stone dressings, and small terra-cotta panels. The estimated cost, including alterations of existing buildings upon the site, will be £40,000.

As the Merchant Taylors' Company is one of the oldest and richest of the Ancient City Guilds of Trade, some account of its origin and history may be interesting. According to a paper read at the laying of the stone, by the Clerk of the Company, we are told that the Merchant Taylors' School dates its existence from the year 1561, when the Master Wardens and Court of Assistants of the Merchant Taylors' Company being moved thereto by Sir Thomas White, Mr. Richard Hilles, and other leading members of the fraternity, established it on its present site, on Laurence Pountney-hill, with the object (as the statutes record) of the better education and bringing up of children in good manners and literature. Part of the "Manor of the Rose," the palatial residence of successive noblemen famous in history, was purchased for the purposes of the school, and several members of the Court of Assistants contributed towards defraying its cost, among whom the Mr. Hilles, before mentioned (who was Master of the Company that year) generously gave the then large sum of £500. The school was designed for 250 boys, and its limited site has hitherto prevented any great extension

of their number, but the building now about to be erected will accommodate twice as many pupils. Shortly after the establishment of the schools, a great addition was made to the benefits it conferred upon the youth who were educated in it by the munificence of the worthy Sir Thomas White, who had recently founded St. John's College, Oxford, and who gave thirty-seven out of its fifty fellowships to Merchant Taylors' School. Ralph Huchenson, one of the first boys admitted into the school, became president of the college. A long roll of names, illustrious in all the prominent walks of life, of those who passed from the school to the college, bears testimony to the advantages that both institutions derived from the association thus commenced. Among those who became eminent in the early days of the school it may be mentioned that five of the translators of the Bible were old Merchant Taylors—one of whom (Bishop Andrewes) was master of no less than fifteen languages. Of the bishops who there received their education, the pious and loyal Archbishop Juxon deserves prominent notice for his devotion to the person and cause of his sovereign. Dr. Wren (Bishop of Ely), who suffered many years' imprisonment for his attachment to his royal master, and Dr. Mews (Bishop of Winchester), who was wounded in the same service, were also alumni of Merchant Taylors' School. Soldiers (among whom was the great Lord Clive, the founder of our Indian Empire), judges, theologians of the first rank, men famous for medical and surgical skill, poets, actors (the elder and younger Charles Matthews among the number), have sustained the reputation of this ancient seat of learning. Seventeen out of its twenty-two head masters have been its pupils, and twelve out of the twenty-two presidents of St. John's were educated within its walls.

Our contemporary the *Builder*, in its issue of 21st ult., contains an interesting article on the past associations of the Merchant Taylors' School, and the site of the old buildings and their belongings.

HEATING HORTICULTURAL BUILDINGS.

A NEW system, called Cowan's Compensating System, for heating horticultural and other buildings, has been patented some time ago by Mr. John Cowan, of Dromore, Kenmare. The system consists in the combination of a lime-kiln and hot water apparatus; and its advantages are set out:—1st. That it saves the entire cost of fuel; 2nd. That it does the work with more certainty and regularity than the ordinary system; and 3rd. That it requires no attention.

A paper, describing the system at length, with other particulars, was read by the patentee on the 11th of the last month, at a meeting of the Horticultural Club. From this paper we give some extracts:—

"The idea of a lime kiln in a garden is not, I confess, a very agreeable one; one is accustomed to connect with it a very considerable amount of smoke and smell, neither of which are very much in keeping with a garden. Stone and fuel thrown about, and much that is untidy, is generally to be found associated with them. But I am happy to be able to state that not one of these objections attaches to the apparatus the merits of which I am trying to advocate. The whole thing is so small, and the quantity of material required so little, that there is no difficulty in preventing all traces of any of the materials used from being seen about them; and when anthracite coal, or culm, which is the proper fuel for the purpose, is used, there is next to no smoke, and what there is is carried right away by the chimney, which also prevents even the least smell from being found from them. It would, of course, be better, where convenient, to have such apparatus fixed outside of the garden walls, or, at least, at the rear of the buildings to be heated; but even when this cannot be done, there need be no fear of anything unsightly being seen more than would be the case with an ordinary furnace and boiler in the same position. At Dromore we were compelled to fix both our apparatuses in front of our houses on account of the nature of the ground, and not one who has seen them has objected to

their position; in fact, a stranger passing would not for one moment suppose that lime was being burnt near him, unless it happened to be at the time of drawing the lime and re-charging the kiln, and even then most people would not think a supply of good fresh lime very unsightly.

"The depth of stoke hole required is, of course, greater than would be the case for a boiler only, but very little more than is required for a tubular boiler, from 10 to 12 feet under the level of the flow pipes, will admit of a good-sized apparatus being fixed. 13 feet, with a proper boiler, would be sufficient for an apparatus to heat 3,000 feet of 4-inch piping. Much less could be made to do, but it would not be so satisfactory. I am fully aware that even this depth in some places would be difficult to get, and I am consequently quite prepared to hear this objection urged against them by some who might otherwise wish to adopt them. I was, however, much encouraged some time since by reading in one of the gardening papers, a proposal to introduce a new system of heating all buildings, by sinking shafts down into the bowels of the earth for thousands of feet until a sufficiently high temperature was reached, when the ascending heat was to be utilized for any required purpose, though I do not remember that the inventor of this new system stated where he was carrying out his experiments. After this I should think that but few would stop at excavating a few feet extra in order to adopt a system so well suited to the purpose as mine. The kiln, then, as I have stated, is built under the ground level. It is built very much in the shape of an egg, with the narrow end downwards, and lined inside with fire bricks or other suitable materials; another wall is carried up at the same time and of the same form as the one forming the kiln, but with a space of about 9 inches between. This space is filled up with sand as the two walls are carried up; the sand is put there for the purpose of retaining the heat, which it does most effectually. When the kiln has been carried to the proper height, a hot water boiler is placed on the top, and built in just the usual way, but of course there are no fire bars required, and only one door, this door is the place at which all the fuel and stones are put in, and the burnt lime is drawn out at the bottom, a small opening being left there for that purpose, just sufficient to admit of a shovel being introduced. The working of the apparatus is extremely simple, and may be taught to any ordinary garden labourer in a very short time.

"When the extent of building to be heated is not great, I recommend the use of the ordinary saddle boiler, on account of its cheapness and durability; and the boiler, of which I have a model here, and which I have designed especially for the use of this system, is simply a saddle boiler with some additions to it, to make it better adapted to this system. In order that the merits of this boiler may be appreciated, it must be understood that when anthracite coal is used there is almost no smoke and scarcely any soot to collect in the flues, consequently the great object is to confine the heat sufficiently long about the boiler until the greater part of it has been utilized, and it will at once be seen that this boiler is eminently calculated to attain this end; it has also the advantage of being low, and consequently does not increase the necessity for depth of stoke-hole to a very great degree."

Speaking of the economy of the system, Mr. Cowan thinks it right to state that a sufficiency of good lime is obtained to pay all expenses, besides getting heat free of cost. Another advantage appears in respect of doing away with night attendance:—

"We find that once during 24 hours is quite often enough to draw out the calcined lime, and re-charge the kiln; and the heat is kept up constantly and powerfully during that time, and in no case can this require to be done more than twice during that time. Those who have experienced the very great amount of trouble which there is with many, even of the best boilers, at night, will know best how to appreciate the feature of my system.

"In order that the kilns may be allowed to continue burning, and the heat at the same time turned off the building which they are heating, I propose to fix the supply cistern somewhat near the boiler, and to have it somewhat larger than usual; into this cistern I propose to take two pipes in place of one—one from the flow and one from the return pipes—and when the water is shut off all the buildings, it will circulate into the cistern, and the house thus can be kept quite cool, and at the same time abundance of heat kept at hand to turn on at a moment's notice. This is a very simple arrangement, and not at all expensive, and will secure perfect command of the heat at all times."

A number of professionals, who visited Dromore, to inspect Mr. Cowan's method,

have spoken in its favour, and believe it fulfils the conditions specified.

We hope the system will receive a fair trial, and that a double advantage may be realised by connecting the system with other buildings as well as horticultural ones. Limestone abounds almost in every district of Ireland, and can be had in plenty. Chalk would seem also to answer well, but this country has but a small quantity of that deposit. In England, where chalk is in abundance, Mr. Conway's system could be carried out, at small cost, in several districts. The present method in use for heating horticultural buildings is costly, in consequence of the dearthness of fuel, and also from the complex arrangements resorted to for securing and distributing heat. With a cheap, efficient, and compensating system of heating, a wonderful change ought very soon to be effected in the production of both fruit and flowers.

ASPHALTE PAVEMENT.

THE annexed letter explains itself. We have already spoken of the advantages of asphalt pavement in our chief thoroughfares, when properly laid with good material. The communication is addressed to the secretary of No. 1 Committee of the Corporation:—

"DEAR SIR,—For the information of your committee I have to inform you that this company, having at length succeeded in obtaining a reduction of the first cost of Val de Travers Rock, are now willing to undertake street pavements in compressed powder, at a considerably less cost than heretofore; and with a view to facilitate the laying of the principal portions of the city with this desirable pavement, without the necessity of individual subscriptions, the directors of this company have entered into such a provisional arrangement as would permit of the Corporation receiving this material for a lengthened term of years, at a cost equal to and probably less than that of obsolete paving stones. For this privilege my company would, of course, require an equivalent consideration; but it might be so arranged that the payment in money of such consideration might extend over a considerable number of years, in order to allow the economy thus effected from the absence of scavenging, watering, repairs, &c., to be applied for the liquidation of the cost of the concession. In making this concession, I am bound to impress on your committee that, outside any interest accruing to this company, we entertain the conviction that our proposition tends to a great public good, that it will prevent Dublin being left behind, while all other cities are conspicuous for progress, and that the ultimate adoption of it by your committee would be hailed by the citizens of Dublin as the greatest improvement introduced into this city during the present century without increase of taxation. We shall be pleased to learn that your committee are willing to enter into a negotiation for such a desirable object.—I am, sir, your's faithfully, J. FORTRELL.

"I may mention we have had a portion of the roadway of Cheapside cut, after bearing the test of an average daily traffic of over 20,000 vehicles for three years; it can be seen at our offices, presenting scarcely any appearance of wear."

PARLIAMENTARY.

THE SHANNON AND THE SUCK.

IN the House of Commons last night, Major Trench begged to ask the Chancellor of the Exchequer, whether he is aware that the state of the Shannon has been the means of preventing the undertaking of the drainage of the extensive districts bordering the river Suck ever since the year 1848, notwithstanding the frequent efforts of the persons affected to obtain the requisite permission to drain their lands; and whether, having regard to the fact that there is no other outlet for the waters of the Suck except through the Shannon, and also that the latter river is under the sole control and guardianship of the Government, he would urge upon them the necessity which exists for taking such steps as may be necessary to place the river in a condition to fulfil its natural functions, and avoid the continuance of this dead-lock.

The Chancellor of the Exchequer—I am not aware that, as the hon. member says, the state of the Shannon has been the means of preventing the undertaking of the drainage of the river Suck. I am sorry to say that I am not prepared to take any steps in the matter, nor am I able to give any advice as to what other steps should be taken.

Mr. Trench gave notice that on an early day he would move for papers which would make the facts in his question patent to the right hon. gentleman.

ADVANCES TO IRISH RAILWAYS.

In the House of Commons last night, Mr. M'Cune asked the First Lord of the Treasury how such Irish railway companies as may be disposed to avail themselves of the intimation to the effect that advances of money might be made by the State to Irish railway companies at low rates of interest, should proceed, in order to bring themselves within the scope of that information, and in what manner will the Government require to be satisfied that such advances will be attended to with an adequate increased facility to the public development of traffic?

Mr. Gladstone—I presume that the question of my hon. friend is founded upon a declaration which was made by me at an early period of the session, but I think that those who have suggested the question to my hon. friend have not adverted exactly to the character of that declaration. The question appears to imply that on the part of the Government I had said that we were ready to deal with railway companies singly and individually, if they came from Ireland and requested a loan from the Government. I have referred to the record of that prior declaration, and I believe it corresponds substantially with what I stated. I venture to repeat the words that I used. I said—"It was quite impossible for the Government to take the initiative in such a matter as that of dealing with the railway companies, because it is dependent entirely upon arrangements for the economical management of the railway companies themselves. The first and most essential step would be that the Irish companies should combine upon some reasonable principle of amalgamation, and arrange among themselves for the transfer of the debt. Even when that step was taken the initiative would still lie with the railway companies." My hon. friend, therefore, will see that agreement among the railway companies is absolutely necessary according to the declaration made by me.

THE HEALTH OF DUBLIN.

THE following is the weekly return of births and deaths in the Dublin registration district:—

The deaths registered in the Dublin Registration District during the week ending 21st June, 1873, represent an annual mortality of 23 in every 1,000 of the population by the census of 1871. In London the death rate was 19 in every 1,000 of the estimated population; in Glasgow, 30; and in Edinburgh, 23. In the Dublin district (which extends over an area of 10,050 statute acres, having, according to the census of 1871, a population of 314,666), the births registered during the week amounted to 151—88 boys and 63 girls; and the deaths to 142—66 males and 76 females. The average numbers in the corresponding week of the previous nine years were—births, 172; and deaths 125. The number of deaths from fever registered during the week was only 3, viz.:—1 from typhus, 1 from typhoid or enteric, and the third from cerebro-spinal fever. Eight deaths resulted from whooping-cough, 4 from croup, 3 from measles, and 1 each from scarlet fever and quinsy. Diarrhoea caused 4 deaths. Seven children died from convulsions. Bronchitis proved fatal in 13 instances, and pneumonia or inflammation of the lungs in 4. Paralysis was the cause of 4 deaths and epilepsy of 1. Eight deaths were ascribed to heart disease, and 5 to liver disease. Twenty-nine persons fell victims to phthisis or pulmonary consumption, 2 to mesenteric disease, and 4 each to scrofula and hydrocephalus or water on the brain. Two deaths from drowning and 1 from burns were registered. Forty-one of the persons whose deaths were registered during the week were under 5 years of age, and 30 were aged 60 years and upwards. Forty-seven of the deaths registered in the Dublin registration district during the week occurred in hospitals and other public institutions; of this number 8 took place in the North Dublin, and 24 in the South Dublin Unions. The deaths registered in No. 1, North City District (Summer-hill), afford an annual ratio of 17 in every 1,000 of the population in 1871—the Mater Misericordiae Hospital is situated in this district; in No. 2, North City District (Coleraine-street), which includes the Rotunda Lying-in Hospital and Jervis-street Hospital, the deaths registered amounted to 13 per 1,000; and in No. 3, North City (Blackhall-street), to 34 per 1,000—the North Dublin Union Workhouse, the Hardwicke, Richmond, and Whitworth Hospitals, and the Richmond District Lunatic Asylum are situated in this district. In No. 1, South City District (Meath-street), which includes the South Dublin Union Workhouse, the Cork-street Fever Hospital,

and Steven's Hospital, the deaths registered afford an annual ratio of 61 per 1,000; in No. 2, South City District (High-street), the ratio was 10 per 1,000; in No. 3, South City District (Peter-street), which includes the Coombe Lying-in Hospital, and the Meath, the Adelaide, and Mercer's Hospitals, it was 28 per 1,000; and in No. 4 South City District (Grand Canal-street), in which Sir Patrick's Dun's and St. Vincent's Hospitals are situated, it was 18 per 1,000. In the suburban district of Rathmines the annual ratio was 7 per 1,000; in Donnybrook it was 22—the City of Dublin Hospital and the Hospital for Incurables are situated in this district; in Blackrock the rate was fourteen, and in Kingstown 28 deaths per 1,000 of the population by the census in 1871.

THE ALLIANCE AND CONSUMERS' GAS COMPANY.

THE committee of shareholders of this company have published in pamphlet form their "report." The practical proposals of the committee are, however, put forth succinctly in the requisition for an extraordinary meeting forwarded to the directors, and a copy of which is prefixed to the pamphlet. These proposals are that the present directors be removed "in consequence of the unsatisfactory position of the affairs of the company;" that new directors be appointed; that the directors shall receive no remuneration until the shareholders receive a dividend of not less than six per cent. per annum out of the profits actually realized; that the salary of the secretary be reduced; that all contracts for coal and other supplies be by tender; and that a committee of shareholders be appointed to investigate the affairs of the company. The directors, as our readers are aware, refused to comply with the requisition, but the committee state their intention of taking immediate steps to convene it themselves, under the provisions of the act. A meeting of shareholders is to be held on Monday next, 7th inst., at the Northumberland Hotel, to take such proceedings as may be advisable in the present aspect of the affairs of the company.

THE DUBLIN SANITARY ASSOCIATION.

At the weekly meeting of the Committee of above Association on Thursday last, the following resolutions were passed unanimously:—

"That this committee having been informed that cholera has broken out in several parts of Europe and America which possess direct communication with this country, desire to record their opinion that the authorities should forthwith make adequate preparations for a possible outbreak of the disease in this city, such as those mentioned in the suggestions made by this association; and that the Local Government Board be requested to put in force the provisions of the Diseases Prevention Act."

"That the acting secretary should be directed to address a letter to the Public Health Committee, drawing their attention to the foregoing resolution, requesting them to act upon the suggestions therein contained, and also requesting from them an early answer as to whether they will do so."

THE ORIGIN OF CRIPPLEGATE.—This gate, so called from the large number of cripples who assembled there, was of very great antiquity. John Lidgate, the monk of Bury, says that in the year 1010, the Danes ravaging the country of the East Angles, Bishop Alwin caused the body of St. Edmund the Martyr to be conveyed from Bury St. Edmunds through the kingdom of the East Saxons, and into London by the way of Cripplegate, where it is pretended that miracles of the most extraordinary kind were performed. The antiquity of this gate also appears from the charter of William the Conqueror, confirming the foundation of the College in London, St. Martin the Great, in which are these words:—"I do give and grant unto the said church and canons serving God therein, all lands and the Moor without the postern, which is called Cripplegate, in other parts of the postern." This gate was also used as a prison, to which debtors and persons charged with trespasses were committed. Anything more unwholesome or unsuitable for the incarceration of unfortunate offenders could not be easily conceived than those buildings which had been erected for the purpose of warlike defence.—*The Builder.*

THE CONVERSION OF THE CITY BASINS INTO BATHING PLACES.

THE movement set on foot for securing the old city basins for the purpose of converting them into public swimming baths is a good one. We have long since advocated the provision of suitable swimming places, as well as free libraries and free parks. We are not, however, believers so far as to feel assured that the old basins by their conversion into public swimming baths will fully meet the wants, nor are we so sanguine as others in thinking that no expense need be incurred in their transformation. The expenditure, however, will not be much in effecting necessary alterations, and providing for their control and management. It yet remains to be seen how our corporate authorities act in the matter, and it is to be hoped that they will throw no obstacles in the way. We believe the corporation have already advertised the area occupied by the basins as building ground. It has indeed been a wonder to us that some of our civic magnates did not long since suggest that these basins should be converted into manure depôts for the scavenger of the city, or that the Town Clerk was not directed by an order of Council to put up boards at each basin inscribed "Rubbish may be Shot Here." It was certainly a great oversight on the part of a Town Council terribly hard up for cash.

We want suitable salt water baths and swimming places for the use of the city north and south, in addition to these now advocated baths, supplied with pure not foul salt water mixed with sewage pumped from the Liffey. The sea coast is near enough to our city to secure a pure and constant supply, whether on the part of a company or a corporation. The city of London is badly situated in respect to salt water bathing, owing to its distance from the sea and the length of its tidal river, which for a great length above and below the city is most impure. Notwithstanding these drawbacks, there are a number of fresh-water swimming baths throughout the metropolis, and some of the public parks supply facilities for bathing by their lakes, in which the citizens are allowed to bathe up till a certain hour in the morning. There is every reason for believing that salt water will before long be conveyed to London from the east coast by a main. The project was mooted some time since, and it will be quite possible to convey salt water by piping from the sea coast as distant from London as Brighton. If this project was carried out by a rich company, public baths, hospitals, and private dwellings could have a daily supply of "fresh" salt water.

Turning, however, from large projects to small and feasible ones, we trust that the city basins will be converted into swimming baths for the use of the city until better accommodation is procurable. We willingly support the movement, and can commend it to the support of the citizens at large.

By our advertising columns it will be perceived that a public meeting is to be held on Thursday evening next, to memorialise the Corporation to have the basins converted into swimming baths.

THE ROYAL IRISH ACADEMY.

At a general meeting of the Academy, held at their House, 19 Dawson-street, on the 23rd ult., the Rev. Professor Jellett, President, in the chair,

Dr. M'Allister read a paper on the Muscular Anatomy of the Civet.

Dr. Sigerson read a paper, in which he pointed out that extensive changes have taken place in the physical geography of Ireland, as indicated by deposits, and referred to the numerous instances recorded in the annals of Ireland by earthquakes and their effects. The evidence of earthquake action given unconsciously in the various old annals of Ireland, where it was, of course, attributed to the agency of supernatural spirits, showed that Ireland was

formerly much more subject to earthquakes than in latter days; and that the country was chiefly affected by it from the west to the north-east. Mr. O'Reilly moved that the paper be referred to the council for publication.

Sir W. Wilde seconded the motion, and said the subject was one of extreme interest.

Professor Sullivan said that the levels of the drift gravel round the coast showed there had been immense changes of level in Ireland, some of them contemporary with the existence of man here.

THE BREEHON LAWS.

The editors, the Rev. Thaddeus O'Mahony and Mr. Richey, Q.C., presented to the Academy a copy of the third volume of the Ancient Laws of Ireland, just completed.

THE CROSS OF TUAM.

Sir William Wilde asked permission to have a cast made from the mould of the Cross of Tuam, in the Academy, for the O'Connor Don, M.P., in order to erect it over the grave of a relative.

The chairman doubted his power to authorize it, but said he would call a special meeting of the council to do so, if requested.

Sir William Wilde presented a *fac simile* of an important stone in his custody belonging to the ruins of Glendalough. He said the desecration going on there was shocking, and expressed a hope that the Mining Company of Ireland and other persons would assist in preserving the ruins. He also presented portions of two ornamented cinerary urns, containing bones torrefied to an extraordinary whiteness, found on the estate of Mr. Scott Moore, at Kilbride, on whose behalf he made the presentation.

Dr. Sigerson read an interesting paper on the cause of the buoyancy of bodies of greater density than water.

The reading of a paper by Mr. John Ribton Garstin, in reference to an ancient parish register of Stabannon, Co. Louth, was postponed. Mr. Garstin has presented a transcript of the document to the Academy.

CORRESPONDENCE.

"APPRENTICE BOYS' MEMORIAL HALL."

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—In your issue of the 15th inst. we observe you copy from a local paper a report of the committee meeting to consider tenders for the erection of above, and termed by you "A Tender Subject." In the original report it is stated—"The secretary stated that Mr. M'Clelland had authorised him to say that he would submit to a reduction of £100 from his tender, making the amount £3,250"; and further—"At the suggestion of some members of committee, Mr. M'Clelland was communicated with immediately respecting his tender, the result of which was a further reduction of £130 on the part of Mr. M'Clelland."

As to these two statements, we have simply to say there is no truth whatever that we made either or any reduction on our tender, nor were we asked to do so. Should you doubt our statement, we refer you to the chairman of the meeting, William Thompson, Esq., J.P., and the secretary, Robert M'Vicker, Esq., both of Shipquay-street, in this city. Please give us the benefit of this correction in your next issue, and oblige, your's, &c.,

M'CLELLAND AND CO.

Strand, Derry, 28th June, 1873.

THE ASSISTANT COUNTY SURVEYORS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—We are very much disappointed and crest-fallen at the collapse which has taken place in our prospects through the disinclination of Lord Hartington having anything further to do with our prospects. I would respectfully ask your advice—What had we better do now? Our honorary secretary (Mr. Browne, of Tullamore) is napping—at least seems discouraged,—when his motto should be *Nil Desperandum*. Would you kindly stir him and the whole society up in the next issue of your favorite journal, and oblige, your's, &c.,

ASSOCIATE, DEPUTY COUNTY SURVEYORS, IRELAND.

20th June, 1873.

[With unity and energy, which means proper organization, success is still certain. The disinclination of Lord Hartington, or any other noble lord, to take up and plead the cause of our kindred professional brethren affords no reason for despair, but ought to stimulate renewed exertion. A representative body who wish to see their grievances redressed must possess vitality, and tone and vigour must be given to their efforts. Agitate, agitate, agitate! was the motto of a great modern tribune, and when systematically and judiciously pursued it is certain to conquer honest rights, if not in *globo* at least in detail. Our best advice to our friends is, to renew their efforts and perfect their organization, and public support and sympathy will not be found wanting.—Ed. I. B.]

TO CORRESPONDENTS.

Fresco Painting.—Very few perfect specimens of mural painting exist as present in this country in connection with ecclesiastical buildings. The spoliation that overtook our churches and abbeys, explains the cause. Some few good specimens were in existence at the close of the last century, which had been protected would now be historically valuable. Glass painted and stained glass windows of a high order of execution were formerly to be found in different parts of this country.

A PLASTERER.—Good stucco work can still be seen in several places in our city—in our old mansions and public buildings. We have pointed out already some buildings in which it may be found. We may possibly soon give a list of the buildings in which stucco ornamentation is to be seen, evidencing skilful and artistic finish.

A "CHIP."—The London Masons are to strike on the 19th of this month, and the carpenters and joiners on the 1st of August. Possibly their action may be anticipated by a lock-out on the part of the master builders, and this lock-out, if it should take place, will involve other of the building branches.

HOUSE DRAINAGE.—Do not let the drain pass under the house from back to front, and be sure and keep the "surface" drain distinct from the other.

SWIFT'S ROW.—We cannot say at present whether the row on the north of the Liffey, or the alley on the south, were called after the worthy Dean of St. Patrick's. It is, however, likely that they were. Our street nomenclature needs an improvement in a national sense.

THE OLD INNS OF DUBLIN.—Particulars anent some of the old inns and hostleries of Dublin will be found in Mr. Gilbert's volumes on Dublin. A complete history of the old inns and remarkable signboards of this city would, if compiled, be a most interesting and amusing volume.

A GAS CONSUMER.—We think the quality of the gas is not likely to improve under the present circumstances of the case. No great reduction has taken place in the price of coals. As that commodity is somewhat scarce, you had better heap turf, instead of coal, on the heads of the corporators.

Some articles in hand, communications, and notices of magazines and other works, are held over until our next issue.

CANDIDATES FOR THE "CAT."

A SANITARY AND SALUTARY WARNING.

ALL cases of selling diseased and poisonous meat, and adulterated food and drinks of all kinds, should be publicly exposed, and the guilty parties, on a repetition of their offences, imprisoned without the option of paying a fine, and in addition receive one dozen lashes as a wholesome tonic for their guilty consciences. We publish a case below which affords us satisfaction, for it shows us that the magistrate who heard it evidenced a determination to put a stop to the chronic villany that exists in our midst. In passing sentence the magistrate carried out what we more than once suggested. When fines have been found powerless to deter rascals and wretches, male and female, imprisonment, without the option of a fine, is absolutely requisite, and all masculine offenders should feel the "Cat."

SOUTHERN DIVISIONAL COURT.—June 26.
(Before Mr. Barton.)

POISONOUS MEAT.—A man named Smith, a provision dealer, of Golden-lane, and three operative butchers, named John Lalor, William Flinter, and William M'Mahon, appeared to answer the charge of having on the 18th inst. had in their possession for purposes of sale, and also for having sold meat which was unsond and unfit for human food. The three latter prisoners came up on remand from this day week, having been arrested by one of the men of Mr. Ephraim G. Webb, the officer of the Sanitary Committee of the Corporation. The evidence which was then adduced was now repeated, and was to the effect that on the date mentioned the three last-named defendants were found going through South Great George's-street and Exchequer-street with a hand-cart upon which there were

placed about 300lbs. of pigs' cheeks, which were in a diseased condition, and not fit for the food of man. Lalor at the time claimed the principal authority in the management of the hand-cart, but the other two, Flinter and M'Mahon, also took an active part in the transaction, and sold two pigs' cheeks off the cart, one to a Mrs. Stavey, and the other to a Mrs. M'Keon, poor people residing in Exchequer-street. Dr. Cameron deposed that the meat was fearfully loathsome and putrid. In a certain sense it was poisonous. Pickled meat was always more so than fresh meat was when in a state of incipient putridity. One pound weight of the stuff upon the hand-cart would have a pernicious effect upon any one consuming it. Smith, the dealer in Golden-lane, from whom the meat was purchased, produced Lalor as a witness to show that he sold the meat to that person only as "old bones," and to be used for no other purpose. Mr. E. A. Ennis, who appeared for the sanitary authorities, said that if the man spoke truly he had grossly deceived Smith; if he spoke falsely he was guilty of perjury, and was a criminal in that respect, and Smith in the other; and in either case he deserved the reprehension of the court. It was shown that Smith, about a year ago, was convicted and fined at this very court by Mr. Barry of having sold a putrid pig's cheek to a woman in the neighbourhood in which he lived, but that the conviction was quashed on some technicality by the Court of Queen's Bench. Smith was understood now to say that these pigs' cheeks had remained in his possession ever since, and that he had never attempted to sell them as food, and at last got rid of them by selling them to Lalor as "old bones." His worship said that Mr. Smith was far too intelligent a man not to know, from the extensive publicity which the Press gave to cases of sanitary prosecutions, and from other sources, that every day he kept this dreadful commodity in his possession, no matter how pure his intentions, he was liable to punishment for a violation of the Sanitary Act. Yet here he sold and delivered over to these men, who hawked publicly through the streets of Dublin poison enough for 300 people, and actually sold a quantity of it. He considered Lalor's share in the transaction no better than that of the men who had placed him in the witness-box. Fines were powerless to stop this loathsome and abominable traffic in a disgusting article, and, it might be said, even in the lives of the poor, who were induced to become purchasers from their very poverty. They should endeavour to stop the business by another means, and he sentenced Smith and Lalor each to two months' imprisonment with hard labour without the option of a fine, and each of the other two men to 14 days' imprisonment. The attorney for the defendants asked for a mitigation of the sentences. His Worship—I have considered the sentences with great attention, and I believe that from the nature of the offences I am really dealing leniently with your clients.

It is a great pity it is not allowable to compel all vagabonds of the above kind, when sent to prison, to live upon the putrid food which they have been caught selling to others.

HOME AND FOREIGN NOTES.

THE BIGGEST HOTEL IN AMERICA.—Chicago has just accomplished the biggest hotel in the country—one of the biggest hotels in the world. The new edifice is called the Grand Pacific, and in order to enable the reader to feel its highness, the following figures are given:—There went into the structure 7,000,000 bricks; 12,000 cubic feet of limestone; and 40,000 of sandstone. In connection with these, 10,000 barrels of lime were used, over 500 tons of cast and wrought iron, in the shape of beams; 2,625,500 square feet of lumber were used in joists, rafters, beams, &c.; 237,000 in inside blinds and shutters; 87,000 lineal feet, or 18 miles, in base boards, and 73,000 in door and window casings, and 52,000 square feet of walnut and maple flooring, and 66,000 of walnut and ash ceiling, covering jointly two and three quarter acres. There were 930 windows, 1,070 doors and locks, and 19,415 pairs of butts and hinges. The price of all this carpentry work was 220,000 dols. In connection with the plumbing work, there were used a mile and three-quarters of iron-soil pipe, and nearly as much of brass hot water-pipe, 60,987 lbs of lead pipe, and 6,000 pounds of solder. There went into the building over eight miles of gas-pipe, and there were 426 chandeliers with 1,518 burners, and 880 brackets with 1,180 burners, making 2,898 in all. There were two-fifths of a mile of speaking tubes, thirty-eight miles of wire, 32,188 square feet of glass, being nearly four-fifths of an acre. Of slate and marble tiling there is more than half an acre. There are also 320 marble mantels and grates. The

contract price of the building was 878,339 dols. 94 cents. Adding to that the value of brick, marble, &c., obtained from the old building, amounting to 122,518 dols., the total cost of, exclusive of furnishing, of course, was 1,000,857 dols. 94 cents. The mason and stone setting cost 195,000 dols., the lime and sandstone 150,000 dols., the painting and glazing 52,000 dols., and the plastering 65,000 dols.

IRISH LIFEBOAT SERVICES.—At the recent meeting of the Royal National Lifeboat Institution, it was announced that rewards and payments amounting to nearly £2,000 were voted to lifeboat establishments. The Greystones (Co. Wicklow) lifeboat had been instrumental last month in saving four persons from the yacht *Nicomit*, of Dalkey, which had been overtaken by a fresh gale from the E.N.E., and a high sea, and was in great danger off Bray Head. The lifeboat was launched through a very heavy surf, and found that those on board the yacht were about to run her ashore, where she must have gone to pieces among the rocks, with the loss of all hands. After affecting the rescue the lifeboat had to run for Wicklow, not being able to land at Greystones. The Arklow lifeboat had also proceeded to the schooner *Hilda*, of Runcorn, which had gone on the Mizen Head Bank. Having given assistance, the vessel got off, and was enabled to proceed on her voyage to Dublin on the return tide. Rewards were also granted to the crews of shore-boats for saving life from wrecks on our coast. Thomas Peake, Esq., of the Tileries, Tunstall, had presented the institution with the cost of a lifeboat station, at Rogerstown, Ireland. Other contributions were also announced, including £50 from Captain J. Grey (late of H.M. Packet Service, Holyhead), £25 from "A Lady," per J. B. Parker, Esq., and £10 10s. proceeds of a musical and reading entertainment at Rugby, per J. Richards, Esq. Several legacies had also been bequeathed to the society. New lifeboats had just been sent by the institution to Thorpe, Suffolk and to Plymouth.

AN IRISH TENOR.—In a recent number of a comic contemporary there appeared a chapter under the heading "Paganini and O'Dwyer," the former a violinist, and the latter a tenor singer. "Here are two geniuses, and we regret to add, unappreciated geniuses. Both are Irishmen, and, therefore, modest and retiring. . . . O'Dwyer is a tenor. Not the only tenor; for there have been other tenors. We do not pretend to say that Rubini was not a tenor; nor will we pluck a leaf from Mario's crown. Mongini compels our admiration; Campanini wins our regard; we like Brignoli. But we do mean to say that there is not, and never was, a tenor like Sangiovanni (that's his pet name) O'Dwyer. You may differ from us in regard to this opinion. No matter. It is our opinion, and we have a right to express it. Better still, it is the opinion of O'Dwyer himself, and he never loses an opportunity of expressing it. . . . This is what Sangiovanni (sweet cognomen!) O'Dwyer can do with his voice. He can do three octaves and the trillo. Think of that!"

THE FREE PUBLIC BATHS, DERBY.—The Free Public Swimming-baths given by Mr. Bass, as we have already announced, have been opened, after presentation to the Mayor on behalf of the town. There are two baths, which are both swimming baths—one for men and the other for boys. They are constructed at the south-east point of the Holmes, at the junction of the Mill Fleam and the River Derwent. The baths are each 100 ft. long and 50 ft. wide, the depth of the men's bath being 4 ft. at the shallow end, and graduating to 5 ft. 6 in. at the deepest end; the boys' bath being 3 ft. at the shallow end, and graduating to 4 ft. 6 in. at the deepest end. Attached to the men's bath there are fifty-seven covered dressing-boxes made partly to close, and other offices and conveniences, each box being fitted with seats and peg-rails. The boys' bath has covered bathing-sheds to accommodate seventy-two boys, fitted with seats and peg-rails, and the customary offices. The whole of the bathing-sheds and dressing boxes are of cast-iron, panelled, with the monogram M. T. B. on each panel. The baths are entirely separated from each other. The attendant's office is at the north-west end, and commands a view of both baths from windows looking on to each. The building and the entrances and walls in the front are constructed of coloured bricks, in an ornamental manner. There will be two mural drinking fountains at the entrance to each bath, and a clock with two dials, one facing the playground and the other the new baths, will be fixed in the attendant's office. The swimming-baths are each lined with white glazed bricks set in Portland cement, and the bottoms are laid with Seyssel asphalt. A foundation of concrete is laid under the whole of the baths and buildings. The margins round the baths are 8 ft. 6 in. wide, and are laid with tooled York stone. The original scheme for water supply was to take

the water from the "basin" at the Long Bridge by a 9-in. conduit through a filter into the baths, which are built at such a level that the water would run in at one end at the bottom and out of the opposite end at the top, thus ensuring a constant supply and change of water, but owing to the intervention of the Canal Company, who considered their interests would be affected, the scheme was abandoned, and each bath is now filled once a week with clean filtered water, which the Derby Waterworks Company, owing to the extension of their works at Little Eaton, are enabled to do at a mere nominal rate. The two baths hold, together, about 260,000 gallons. The whole of the works have been designed by Mr. Geo. Thompson, the borough engineer and surveyor, and carried out under his superintendence, the entire cost being about £2,500. Mr. Robert Bridgart, of Derby, was the contractor for the whole of the works, excepting the ironwork, which was performed by Messrs. Stacey, Davis, and Co., of the Phoenix Foundry, Derby.—*Builder*.

"A VISIT TO EPSA'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPSA'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPSA & Co., Homoeopathic Chemists, London." Also, makers of Epps's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

NOTICE.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbott-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

RATES OF SUBSCRIPTION TO IRISH BUILDER.

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The Irish Builder.

VOL. XIV.—No. 326.

Public Works in Ireland.*



THE present Report of the Board of Public Works, Ireland, is interesting in many ways, as it shows that considerable activity is manifest in different directions, all tending to develop the resources and consequently the ultimate prosperity of this country. During the past year loans have been sanctioned to be paid out of the respective funds, and for the following objects, in accordance with the act in relation to each. From the Public Works Loan Fund:—Counties, for Roads, £400; Fisheries, Piers, and Harbours, £3,600; Labourers' Dwellings Act, £7,175; Railways, £13,800; Glebe Loans Act, £18,245; River Drainage Act, (the new district of Boolinarrig) £3,000; River Drainage Maintenance Act, £1,200; Waterford Corporation, for providing Water Supply, £50,000. (4) Land Improvement Act—For Improvements by thorough Drainage, Farm Buildings, Labourers' Dwellings, Fencing, Planting, &c., £96,748. (5) Land Act—For the purchase by tenants of their farms, £105,128. Total sanctions, £298,796. The amount of sanctions on all services being £64,042 over that of the previous year. In the above sanctions for loans those in relation to labourers' dwellings, drainage, and farm buildings, and those for providing a water supply for Waterford are useful and commendable loans, and ones which give us great pleasure in recording. We are always most interested in the matter of improved dwellings for our people, and a constant and pure water supply. In respect to Waterford we have long since pointed out its defective water supply, and its ills in a sanitary direction. Several applications for loans to carry out works of public utility have been made to the Board, which are under consideration, including ones for railway companies, town commissioners, mining companies, and harbour boards. The Corporation of Dublin ask a loan to the extent of £50,000 for improvement in the streets; the said improvement which ought to have been executed long since out of the Corporation's own resources, if economy had been practised in the management of the city estate. The Governors of Stevens's Hospital ask a loan of £2,000 for the purpose of raising the roof of the hospital to improve the health of the constabulary patients who use the upper storey. This is a loan which is entitled to a fair consideration, and there cannot be much objection (if any) to granting it. The Board are glad to find, as we are also, that increased advantage is being taken of the Labourers' Dwellings in Towns Act. Under it three loans have been made for the provision of 103 dwellings for the labouring classes in Dublin, Cork, and Banbridge—all important localities, and each standing much in need of improved dwellings both for the artisan as well as the strictly labouring classes. The total advances made during the year amounted to £182,012, against £161,202 of the previous year, and the repayments, including principal and interest in

the same period to a gross sum of £151,810 against £165,880. Repayments continue to be made with regularity.

In respect to the works of repairs and maintenance in the several public buildings and official residences in Dublin and throughout the country, a pretty fair amount of work is shown to have been got through or projected. In connection with the postal service in Belfast, Limerick, and Cork, extensive buildings and alterations are in progress to give increased accommodation for postal and telegraphic purposes. In customs buildings, a new and extensive block is intended for Waterford, in which will be comprised several public departments. In Derry a similar concentration of offices is intended. New constabulary buildings have been completed at Naas, Rocheford Bridge, Westmeath, and at Skibbereen, Cork, and other barracks for same force are in progress at Carna, County Galway, and Caherciveen, County Kerry. In Dublin several barrack station houses and offices within the metropolitan district have been repaired. In the Phoenix Park a lodge for the overseers and park constable has been completed, and some necessary work for the maintenance of the Park and "the cultivation of the People's Garden have been carefully attended to."

A number of coast-guard stations have been completed; several more are in progress, and plans for many more are in preparation. For the works of repair and maintenance at the various coast-guard stations the sum of £4,462 has been expended—a not very large sum.

In the matter of National Education Buildings, twenty-five new ordinary "literary national school-houses" have been built during the past year at a total cost of £9,236 2s. 6d., towards which they contributed as grants two-thirds of the sum of £6,157 8s. 4d., the remaining third being made up by the contributions of local persons interested in the said schools; of these four are in course of construction, upon which instalments on account of grants have been paid to the extent of £770.

Additions and enlargements and other works have been effected at 35 National Schools, at a total cost of £1,220 7s. The Board paid two-thirds, the remaining third was a local contribution. For new works, alterations, and repairing and maintaining the Metropolitan (or Central) Model School Building, the District Model and Model Agricultural School, the sum of £4,893 8s. 6d., and a further sum of £2,395 11s. 2d. were laid out for furniture for those buildings. On the ordinary literary National Schools in charge of the Board, a sum of £2,007 17s. 1d. was expended in repairs and maintenance. Under the Labouring Classes Lodging Houses and Dwellings Act, ten applications were received during the year ending 31st of March, 1873, but three loans only were decided upon during that period. One was an advance to Sir John Arnott and others of £9,975; a second to Edward Rice Burns, of £1,000; a third to Mr. Thomas Ferguson, of £1,200.

According to the statement of the Board, "The loan to Sir John Arnott and others was for the purpose of constructing sixty dwellings for the labouring classes in the City of Dublin, and the loan to Mr. Burns, as secretary of the Cork Model Dwellings Association, for constructing ten double houses for the labouring classes in the City of Cork; and the loan to Mr. Ferguson for

constructing twenty-eight houses in the Town of Banbridge, in the County of Down—making in all 108 dwellings."

Works of harbour improvement and reparation have been executed at Kingstown, Howth, Dunmore, and Donaghadee. Exclusive of mail and passenger steamers and yachts, the number of vessels making use of Kingstown harbour during the year amounted to a total of 1,631, representing a tonnage, on the whole, of 234,699. This shows an increase over the previous year, the figures being for the first, 1,492 and 206,667. The vessels included several to and from British and foreign ports, some calling for orders, also men-of-war and troop steamers.

The whole expenditure charged against the several undertakings under the Arterial Drainage Acts, including £70,201 for works chargeable to counties, amounted at the end of March, 1871, to £2,394,516 13s. 7d. The repayments being £1,153,542 16s. 10d.

The duties of the Board during the past year—as they have since 1861—were confined to "determining, on the application of proprietors, the amount of increased rent to be paid by tenants holding under leases, in respect of the benefit derived by them from improvement in their holdings, resulting from drainage operations, and giving information, assistance, and advice to the trustees of districts on such points connected with their trusts as they might request, and which we have felt it within our province to give—all executive operations having been long since brought to a close." We italicise the last words, as it may remind those who are interested in the quarter of drainage and improvement of lands under the Board, in virtue of the original Acts, varying from the 5th and 6th Vic. to the 21st and 22nd Vic.

In re the "Drainage and Improvement of Lands (Ireland) Act, 1863," and the amendments thereof—Arterial drainage comes in for notice. Applications for three new drainage districts have been received since the last Annual Report of the Board—the River Bride and Kilcrea, County Cork, the Upper Gully River, Queen's County; Ballycranmore, Blackstaff and Strangford Lough, County Down.

The total number of districts brought before the Board since the passing of the Acts and up to the 31st of March last were 35. The total area of land to be improved in these districts which have been or are being proceeded with is 77,104 statute acres, at the estimated cost of the work £344,428. The loans sanctioned under these acts amount to £134,135, and the repayments from the districts, in respect of which awards have been made, amount to £14,682. Applications were received from proprietors during the past year, for increased rents to be paid by tenants, in respect of lands improved by drainage, respecting 291 holdings. Increased rents were determined in 113 holdings.

We may look into the other matters treated in the Report in our next, and make some remarks thereon.

THE DEVELOPMENT OF OUR TURF INDUSTRY.

SECOND ARTICLE.

IN our last issue we summarized Mr. Meadows' introductory paper on ordinarily produced turf, and in our remarks we believe we, to a great extent, agreed with his reasoning. In a second paper, in his useful little work, our

* "The Forty-first Report from the Board of Public Works Ireland." Dublin: Printed by Alexander Thom, 1873.

author treats of Holland and the Netherlands in connection with turf industry, and we shall presently see what conclusions he has come to on the question.

The Netherlands, although without coal resources of its own, is otherwise favourably circumstanced as regards its importation from the northern coal districts of England, and also from other Continental coal-beds, such as Belgium on the south, and from the Prussian provinces on the east. Though favourably circumstanced in this way, yet the Netherlands has turned its own indigenous peat deposits to good account. Would that Ireland would do the same. The quantity of imported coal used in the Netherlands bears a small comparison to the amount of peat utilised for domestic wants. The coal is used for railways, steam navigation, iron foundries, gas-making, and a few other industries; but with a population of four millions or upwards, the consumption of native turf must be great.

The Board of Trade returns shew that in 1871 the total quantity of coal exported from England to Holland and the Netherlands was less than half a million of tons, giving a total value of £226,281. On an average, according to Mr. Meadows, this would be at the rate, for tonnage price, of about 9s. 2d. per ton all round. The well-known maritime character of the Dutch, and their historic trading habits, are exemplified in many ways, both abroad and at home. Internally it is shewn by their long-opened and admirable system of canal communication, which makes their carriage of all commodities a marvel of cheapness. Last year the price of the best English coal, when sold in small quantities by retail, was about 85s. per ton in the Hague. The cost of coal was then a matter of serious importance, and it behoved the thrifty Dutch to think well and act wisely in respect to their own resources.

In a work published some few years ago, entitled "La Neerlande et La Vie Hollandaise," written by Alphonse Esquiros, and quoted by Mr. Meadows, a good insight is given into the modes and industrial habits of the people of the Netherlands, and particularly in regard to the production of peat. Can it be said of Ireland, as it is said of the Netherlands, that the extraction of peat supplies labour for several thousands of hands? Do nearly the whole population of Ireland, like Holland, warm themselves by their own turf fires? Certainly not, nor even by native coal. While the consumption of peat is increasing in the Netherlands, there is reason to fear that, at least until lately, the consumption of turf has been decreasing in Ireland. What sort of scenes or pictures are to be found in the vicinity of turf-cutting villages or districts in this country? Are peace, contentment, good dwellings, well-clad and well-fed people to be found? Alas, no! Can we point out any places in the vicinity of our bogs "where pretty houses stand detached here and there, while clumps of trees, gravelled walks, and patches of grass, connect, by a belt of verdure, the town house, the hall of justice, and the church"? Where are the delightful country villas with extended gardens and meadows, which were, a quarter of a century ago, peat-beds? Turf is cut year after year, and re-cut, the waste of former years serving for a second cutting. Yet our bogs are unreclaimed—our turf-cutters poor and in rags, because an industry that should be pursued as a special one, is subordinated to farm-

works, as the weather answers or the exigencies of small farmers determine. Alphonse Esquiros writes:—"In South Holland, a few leagues from the Hague, is the village of Wateringen. Gardens, intersected by small canals, wooden bridges leading to paths covered with fine sand, fields artistically cultivated, houses, which fruit-trees enfold like a garment; a school, two churches, and a mill with gilded axis, form what the English call a secluded spot. By the side of the village extend the peat-beds."

This is a true Dutch picture of picturesque and practical industry. It is a picture that many a Dutch painter has already drawn on canvas, and has loved to draw. Where the dwelling shews homeliness and care, industry will be apparent. Rags, wretchedness, and dirt cannot co-exist with independence and industry, no more than water and oil will coalesce. At Wateringen the peat is excavated from under a stratum of earth and clay from two to three feet in thickness. The arable land is carefully removed and deposited in another part of the field. When the peat is extracted and the water drained off, a basis is formed for fresh cultivation. In winter time the preparations usually begin, and the working of the peat-bed, which has been laid bare, commences in April or May, and ends in September. The peat is extracted from beneath the water that lies under the stratum of earth, the workman being provided with large waterproof boots. The peat is filled into a barge, which, when full, is moved to the land, where the peat is discharged into troughs or vessels of about twelve feet square by two deep. The treading process with the feet then commences, and any roots or pieces of timber removed. When sufficiently kneaded, it is thrown on the ground in lumps, which, after four or five hours' exposure, is levelled by the workman with small pieces of board fastened under his feet.

The ground that receives the peat is first levelled for the purpose, and is generally strewn with dry leaves or other substances, to prevent the peat adhering to the surface. When a uniform stratum is obtained by the treading process, the peat is again allowed to dry a little, after which it is marked out lengthways and crossways by an instrument like a rake, with lines for cutting. Subsequently it is divided into pieces, according to the lines traced by the peat rake. All the drying is performed in the open air by women and children. During the busy season at Wateringen, about one hundred and forty workmen are employed on one bed. The men are paid by piece-work, the best earning about 2s. 6d. in the day. We know what farm-labourers and turf-cutters receive in this country, and the smallness of their pay has no set-off, by an improved home or other inducement, to continue at turf-cutting. It will be always so, until some systematized effort is made to constitute turf-production a special national industry.

As in Ireland, the quality of the turf produced in the Netherlands varies a good deal. There appear to be three kinds, suited respectively for the kitchen, parlour, and drawing-room. The turf used for industrial purposes is extracted from the low beds, being preferable to that taken from the high peat-beds. The bakers use the loose sods in baking their bread. Turf is also used for lime kilns, breweries, distilleries, oil-mills, and tileries. Coal, if it be good, may evolve twice the heat of turf; but as it has been re-

marked, if two bushels of turf produce the same effect in a stove as one of coal, all proportions being maintained, then turf must be consequently cheaper. The carriage and commission expenses, owing to the number of hands that have to do with coal before it reaches the housekeeper, run it up to an extravagant price, considering its first cost at the pit's mouth.

In Holland, writes the Dutch author already quoted, "Moral development is ever associated with that of material comfort, and in the colony now described there are four public schools. Such an association of facts, as land being reclaimed and youth educated, is pleasant to look upon. When we now reflect that *it is peat which has done all this*, we ask ourselves why numbers of inhabitants of the old world rush to remote districts in America, instead of commencing to transform the Plains of Drenthe or Overijssel. The first colonists who arrived to work this great California, on the banks of the Dedemsvaart, were foreigners. There were among these, Germans, Poles, and Greeks; but land exercises a power of rapid assimilation over different nationalities, and Avereest at the present day is, to all intents and purposes, a Dutch colony."

What a lesson is here conveyed to the outward bound or intending Irish emigrant? The land laws of Ireland have, however, heretofore and still cast considerable obstacle in the way of our people. The small cottier-farmers of this country, despite their intense attachment to the soil, have starved upon it, though the materials of prosperity and independence surrounded them on all sides. The reclamation of bog-lands or less unproductive lands has moved on slowly; consequently, want of employment, want of food, want of fuel and clothing, and occasional famine, became the chronic condition of a great portion of our agricultural population, who might be almost constantly engaged on a profitable industry. In the Netherlands, for upwards of a century and a half, the systematic reclamation of peat land has been carried on with increasing zeal and perseverance.

When the Netherlands commenced to utilise their own peat beds they laid the foundation of their present happiness and independence. In Ireland there is no colonization needed, save what the country itself can amply supply. Ireland cannot put a duty on the importation of foreign coal, but she may, to a great extent, save a considerable sum in the carriage of that article by development of her own coal and peat resources. With canal and railway communication turf can be rapidly conveyed from west to east, and a return freight of many necessary agricultural wants obtained. In Holland two years are sufficient to convert bog land, after the peat had been excavated, into arable land, and what is accomplished in Holland in this way can also be accomplished in this country. In Holland "the contracts that are entered into with the colonists by the proprietors of the moors, whether the latter be the Government or private individuals, are various. Sometimes the several portions of the moor or bog are sold, so that both the turf and the ground under it belong to the purchasers. Frequently the colonists buy the turf only, and give up the ground to the proprietor when the turf is cut away; or, again, the colonist binds himself to cut yearly a fixed quantity of turf, for which an average price is fixed, and of this the colonist pays a

portion to the proprietors, and retains the remainder for his own labour. If in the sale of the turf the colonist makes more than the average price agreed on, the gain is his own." If the present owners of bog lands in Ireland would let them, to be worked on reasonable terms, and if small and industrial colonies were established in the vicinity of these large tracts of an unproductive wealth; the wealth exists, but labour is needed to give it a proper marketable value.

We agree with Mr. Meadows in thinking that the example of the Dutch is reassuring in more ways than one; for it certainly solves the economic question in favour of turf compared with coal at 25s. per ton at seaport towns, as it also demonstrates that the development of our turf industry on a large scale is not actually dependent on mechanical systems. Ordinary manual labour can be profitably expended in the production of ordinary turf for domestic uses. The labours of the Dutch plainly prove this, and all that is needed is well-directed and systematic efforts with us to rival our commercial neighbours. Our turf industry once developed as far as is possible by the ordinary methods pursued by the Netherlands, would soon create a revolution in the state of the agricultural labour market. Employment begets employment, and one industry is followed by another. We cannot repeat too often that to make our peat fields yield large and profitable returns, and make them supply fully a common want we stand mostly in need of, the work must not be subordinated to other farm labour in the same manner as has been done for a series of years in Ireland.

We will next look into the modern mechanical systems advocated for the more extensive and rapid production of dense turf for general wants.

ANENT THE CORPORATION.

We are not disposed to enter into the Mayoralty question that was decided by a full muster of interested gentlemen at the last monthly meeting of the Corporation. Politics and religion were dragged into a movement in which neither should have been allowed to enter. It matters not to us as professional journalists what shade of politics or religion a Lord Mayor or any other civic magistrate may belong to; but if an honourable understanding exists, that understanding should be maintained. The Corporation of this unfortunate city does not, however, of late years furnish safe precedents to be guided by, as it is always a question of men—i.e., a party and not measures—that is put before the public in that wise assembly of governing partizans.

Passing from the Mayoralty question to that of the election of officers, it was also worthy of note to find the strong muster of the "purely disinterested" which attended to vote in their favourites. A money question is always certain to command a full house, particularly when a post is to be filled and a handsome salary secured. Were it the question of a convalescent home, a fever shed, an ambulance for the removal of the sick, the removal of scavenger from a stricken neighbourhood, an increased supply of water, or any other sanitary matter requiring urgent attention, there would in five cases out of every six be "no house." A few members would call in—probably peep in,—and then pass off "on 'Change." The city business is

left to take care of itself when there is no party matter at stake.

We are not aware whether it has occurred to the mind of any person outside our immediate acquaintance, that there are great international interests between the heads of certain houses in London and the rulers of certain other institutions in Dublin. There is a most lively interest, indeed, felt in more than one quarter of London in the success or non-success of corporate action in this city. During a recent visit to the great metropolis we discovered the key, and indeed we found it unlocked chambers that no one could have thought could have held anything to compare with more distant ones. To be lectured to from London was once resented as an insult; to be advised from London now in a general and considerate way is not only a gracious act, but a gratifying one to several people. A bankrupt city that can afford a handsome remuneration to its officers will always maintain its dignity and credit in paying for efficient legal and other professional services. It matters not whether improvements take place, so long as projects can be brought forward; the novelty of the new will blind the ratepayers to their sufferings in respect to the old.

Long live Cork-hill and the family party! There will always be a spare table at the Westminster Palace Hotel for distinguished visitors from Dublin; and if they come accredited, so much the better! Here's to dear dirty Dublin! Ha, ha, ha! Long live the Corporation! Put on another penny in the pound, and vote the supplies! *Ex nihilo nihil fit.*

FOLEY'S STATUE OF SIR JAMES OUTRAM.

THE works of Mr. Foley are in general successful performances, and our Irish sculptor whether he finally executes in marble what he has modelled, or whether a bronze cast succeeds a plaster or other model, like successful results are obtained. The Burke and Goldsmith statues, though not elaborate works of art, present a historic faithfulness; whatever they may lack, the want is not made up by details foreign to the subject. We hope when the long-expected and long-in-hands O'Connell monument is finished, it may be worthy of the artist and an ornament to our city, which cannot boast of a great number of fine statues, though it might win the palm for some positively ugly ones.

Speaking of Mr. Foley's latest work, which is now on view, prior to its shipment for India, in the open space between the United Service and the Athenæum Clubs, Pall Mall, the *Standard* says:—"Some years since this sculptor produced a remarkable equestrian statue of another battle-field hero—Lord Hardinge—which, like the present one, was publicly exhibited in the old quadrangle of Burlington House. Mr. Foley deals with his military memorials in a way entirely his own. His heroes are not merely securely balanced, baton in hand, on safe, stout war horses, after the old fashion; on the contrary, they seem to think and act. We remember nothing in sculpture more exciting to look upon than this figure of Outram, who, sword in hand, leans back on the flank of his horse commanding and encouraging rank and file. The figure is that of an intrepid man in the heat of a great action, a live man, as it were, on a live horse. Viewed from the steps of the Athenæum only the contours of the group assume grand proportions, and the attitudes are all appropriate to the moment which may end in defeat or victory. In very few of the statues we have seen of the class now referred to would it be easy to say why the illustrious personages represented parade themselves so proudly. Seldom do they

suggest anything beyond a peaceful, friendly review. It is not so, we may repeat, with Foley's present work. The spectator, as in the case of the Lord Hardinge, is startled by the noble bearing of the soldier, whose whole frame, like that of the animal which he holds in check, seems animated with a spirit and daring unusual. The figure of the hero has nothing of the classical type in it. It is the form of one bowed with hard work and zealous devotion to duty; the open intellectual face, in its strong individuality, tells of success to come. The main features of the group are strongly marked, yet there is enough of finish and refinement on the surface to satisfy the fastidious observer, alike in the expressive face and costume of the rider, and in flesh, vein, and integument, indicated by a sure hand on the glossy surface of the spirited animal who looks rather to need the curb than the spur. We were at first sight inclined to detect some disproportion between man and horse, but from the point of view most favourable—namely, the Athenæum, this feeling soon disappears, and the eye grows content with the whole, and with the several parts which, combined, make up the total. In nearly every sense the work, while hardly equal to the sculptor's early statue of Lord Hardinge, is an able and lifelike piece of sculpture, and worthy of its intended site in Calcutta. India is fortunate in its choice of sculptors. Another work, a noble piece of portraiture, having for subject the eminent soldier, Lord Lawrence, by Mr. Woolner, will shortly be in a state for exhibition. It is already in the moulder's hands preparatory to being cast in bronze."

TESTIMONIAL TO MR. HENRY COLE, C.B.

SOME time ago a provisional committee was formed, consisting of gentlemen interested in the promotion of art and the industries of this country, for the purpose of recognizing in some personal shape the services of Mr. Henry Cole, C.B., on his retirement from the direction of the South Kensington Museum. A meeting was held at Willis's Rooms on Friday, of noblemen and gentlemen willing to co-operate in forwarding this object. Among those present were the Duke of Sutherland, the Marquis of Westminster, Earl Granville, Lord Houghton, Lord Henry Lennox, M.P., Lord Clarence Paget, Sir M. Digby Wyatt; Messrs. J. C. Horsley, R.A., Geo. Godwin, J. Scott-Russell, P. Graham, J. C. Crace, G. Goldney, M.P., J. Ella, H. Edwards, M.P., C. Minton Campbell, Dr. Wilson Forbes, Dr. Birdwood, &c. The chair was occupied by the Marquis of Westminster.

Lord Houghton moved the first resolution—"That it is desirable, on the retirement of Mr. Cole from the direction of the South Kensington Museum, to recognize in some permanent form his great services to the public." He paid a warm tribute to the worth and services of Mr. Cole, who had begun life as a practical as well as a theoretical artist. Mr. Cole had carried out all that he had had to do by combining both spheres, and that had made him the powerful man he was, and he had combined these characters with a persistence which was remarkable. He hoped this testimonial would take a national form; and that as many names would be attached to it as possible. Earl Granville seconded the resolution.

Lord Clarence Paget moved the second resolution—"That public subscriptions be invited to carry out the foregoing resolution." It was supported by Mr. George Godwin, and carried with acclamation.

The Duke of Sutherland in moving the third resolution—"That the gentlemen whose names have been already published form the committee," paid also a high compliment to Mr. Cole. The resolution was seconded by Mr. Crace, and adopted.

Upwards of £700 was subscribed before the meeting separated.

MEMORIALS OF OLD ESSEX BRIDGE.

[Being Extracts, with Notes, from the Diary of George Semple, Architect.]

OUR architect proceeds to describe his progress and difficulties, and the means taken to overcome them:—

FRESH DISCOVERIES AND DIFFICULTIES.— THE DIARY.

"September 23rd the masons began to lay the thorough foundation, but particularly to secure the bottom of the breastwork which extended about 15 feet from the bank, and in the meantime the labourers were clearing out and levelling about 20 feet more, which being just accomplished they were hurrying in stones to be ready for the masons, except one man, who was left to throw out and level some small matters which they left undone; but all the alarms and frights we had met with were nothing to a fresh discovery which that man first observed—the floor (which was clean, smooth, and dry) opening. I was instantly called, and when I got on the spot could clearly perceive the ground swelling up and opening, and it soon extended to the length of 10 feet, turning rather southerly at the west end, and the crack or opening was about three or four inches wide in the middle. The tide was then about ten feet high, and in the middle of the crack we found the water beginning to spring up, which gently increased to about a foot diameter, and sprung pretty fast. I called for another pipe of the same length, and had it drove down in the centre of the ebullition or boiling up till it came to the rock, and having bored and cleared it as before, which eased and gave it vent, we found the water rise up, and in fact the very same as came up in the three former pipes and to the same level, although this pipe was 17 feet to the south side of them; and we plugging up this pipe also, the men did all in their power to get the stones and mortar ready for the masons, and in the meantime the water that sprang up through the crack rose 18 inches deep in the lower part of the pit, but providentially we then had the masonry built above six feet high against the bank; but when the ebb came it desisted, and we soon got out the water and laid the largest and flattest of our stones upon the crack, spreading some litter under them, and before next tide had that part of the foundation almost as high as the other; for, from the time of our getting the bridge taken down to high water we wrought both night and day without one moment's intermission, as we had two sets of all sorts of men that relieved one another, alternately every eight hours, not excepting Sundays, when our urgent occasion required it; yet, notwithstanding, we had luckily conquered that subterraneous water at so critical a time. It never failed every tide whilst we wrought in that pit to contribute greatly to the increase of the pump men's labour, but as we wrought with unremitted perseverance and great expedition we most fortunately prevented its bursting upon us. And of this I am assured that if we had not that instant loaded that opening of the ground, the subterraneous water would certainly have broken in upon us, and if it had there could have been no kind of possibility of ever building a substantial bridge in that place, considering the condition that everything was then in, and so many thousand pounds worth of labour and materials would have been totally lost, and our then hopeful project entirely at an end, as Dr. Rutty had told us."

[The above remarks of Semple, if not considered in the light of existing ways and means in his day, would be rather amusing for their simplicity. Modern building and engineering appliances, and particularly in the matter of laying foundations would make short work of the water difficulty that annoyed our architect, and threatened to frustrate his plans. A steam-pump or two in the present day is sufficient to keep a very large volume of water, even if it made way, from doing any serious damage or obstructing the lay-

ing of a foundation. The subterraneous water spoken of by Semple may either have been an old sewer or small stream passing along the surface of the rock. Both sides of the quays had been considerably elevated in the embanking of the river previously, and some sewers and streams whose outfall was not properly attended to and got choked up, forced their course in another direction.]

THE MAIDEN COFFER-DAM.—FIRST TRIAL.

"We made the first trial of our coffer-dam on June 27th, and it kept out three feet six inches of that tide.

"July 3rd.—We screwed down the sluices when it was high water, and kept them down till half ebb, in which the water in the dam fell three inches, and thus we tried and proved its staunchness several times, both backward and forward; but the south-east corner of it that stood on the great depth of stones that had been carried down by the floods into that deep pool was like a French drain (as before mentioned), which we began to despair of ever getting made even tolerably staunch.

"July 7.—We screwed down the sluices at low water, and before high flood discovered that the tide water had wrought its way in under that south-east corner through the stones and rubbish of the old bridge, and began to spring up about 20 feet within our dam after a very furious manner: on the first appearance of which I ordered the sluices to be screwed up and let the tide in, by which we drowned the springing, which did us very little harm, and at low water I set all the dredge and water-men to that corner, both without and within, and in short we took out and removed from that corner every stone that was in our power, and filled the vacancies with clay, &c.

"August 3rd.—The sluices were screwed down at low water, and when there was nine feet flood without, the water had rose only thirteen inches within.

"5th.—After an exceeding heavy rain there came down a sudden rapid flood, and tore away many of the ships and lighters from the quay, snapping their moorings as a burned pack thread, and did them great damage, but we were prepared for it, and kept open our sluices, so that the water then rose as fast within as it did without; but it did no other damage than delay us a little, and wash away some of our clay. And after this, the next day, we proved the dam again, and during the whole tide the water within rose only four inches.

"Sept. 28.—At 3 o'clock in the morning we set the first cut stone of the land abutment without any parade, which time would not admit of.

"November 1st.—We carefully finished the north pier, springing high, and cut the six-inch dove-tailed piles that cased the thorough foundation just at the surface of it, half through, so as we might easily break them off there when we pleased.

"6th.—We took up the straight beam that went across the pit, in order to let the carpenters put up the centres of the north arch."

[In connection with the above preparations Semple gives plates representing the plan of the foundation of the west end of the north pier, with the rough masonry surrounding the piles. The cut stone work, the rows of piles, sheeting, centring of the arches, the bonding of the stones, and other working details connected with the structure, are also clearly shown in the illustrations. Were George Semple writing, like Chesterfield and others, for the information of his son, he could not have taken more pains to make everything clear. It would be well in these days of more ambitious effort if our architects and engineers possessed a little more of the faculty of the teacher than the talker, or mere descriptive writer. Their drawings are often more difficult to understand than their writings, nevertheless they rise and grow rich by the practice of their profession. To obtain a name, even distinguished, is not necessarily the securing of a fame. The

humble pioneer in any branch of science or art is often for long years forgotten, but he is certain to live again in his works when those who would decry him are forgotten. How many architects of the present day acknowledge their indebtedness to the labours of their dead or living brethren? Semple acknowledged his indebtedness to all who afforded him a hint, and he left behind him many valuable hints which have proved beneficial to others, and even after the lapse of a hundred years have their value still according to circumstances.]

THE FRONT FOUNDATION.

"The method we took in laying the foundation was this: after we had drove the oak piles down to the rock we spread a plentiful coat of roach lime and sharp gravel over the ground, and laid a course of large flat stones, and filled and hearted them in close about the piles for about a foot high, then we covered that course with another plentiful coat of the dry grout (i.e., the roach lime and sharp gravel), and the next course and all the rest were laid with mortar after the usual manner, only with this difference, that every stone swam in mortar and each course was grouted as above, and so we went on till we came to the level of the caps that were laid over each row of piles, and then wrought up and levelled them, on which we laid three beams stretching the whole length of the pier from starting to starting, and filled up about them with the masonry, but the thorough foundation that lay under the arches was laid and securely bedded, and many of the stones were rather pitched upon their ends, and wrought close together, so that there is a substantial stone floor for the bed of the river between the piers, on which we spread a course or stratum of about a foot thick of sharp coarse gravel mixed with new and old lime rubbish, and we covered that with a plentiful bed of such coarse gravelly stuff as we could collect within the dam, which together made an average about 2½ feet thick. My reason for laying this covering on the surface of the foundation was principally to preserve the green mortar that lay on that surface from being washed away before it would get proper time to cement, and as I had 4½ feet from that surface to low-water mark I concluded that for the present time 2 feet deep would answer the purpose of navigation, and we finished all the rest of that thorough foundation in like manner except the south arch. I am sensible there was no sort of necessity for piling this foundation as there was such a depth of masonry under the piers; however, as it could not be so strong as on the south side, where they were built on or very near the rock I thought it advisable (as we had plenty of poles), rather to err on the safe side."

(To be continued.)

BOOKS RECEIVED.

Spon's Architects' and Builders' Pocket Book, &c. By W. Young, Architect. London: E. and F. N. Spon, Charing-cross. 1873.

We can commend this as a very handy, well arranged, and useful pocket-book of memoranda and prices, suited to the common wants of architects, builders, engineers, surveyors, and foremen and jobbing operatives in general. A large amount of practical data is given in connection with all the building trades, and given in a clear and intelligent manner, divested as far as possible of perplexing technicalities. There are many persons having to do with building matters, who though not professionally engaged therein, will find this little pocket-book, compiled by Mr. Young, a very useful companion indeed. From excavations to finishings, both in relation to materials and workmanship, tables of measurement and prices are given suited to present practice and actual cost. Included in the work will be found the weight and crushing strength of stone, iron, and

other building materials, illustrations of all forms of mouldings of the different Gothic periods, examples and proportions of the five orders, perspective diagrams of plans, roofs, &c., lime, cements, mortar, sand, concrete, thickness of walls, drains and sewers, warming and ventilation, gas and water supply, and several other important matters are treated of in the work. An excellent index is supplied at the end of the little book, which affords an instant reference to anything required, either as to the materials used or to the prices in connection. In a word, this is one of the best little works of its size that we have met with, and we would be glad to see a similar work issued here, in which Irish building stones, and the prices of materials and labour would be similarly illustrated. However, this pocket-book will be found to supply the common wants of the three kingdoms in architectural and building practice.

The Alliance and Dublin Consumers' Gas Company: its Present Management and Future Prospects. Dublin: Printed by John Warren, Fownes's-street.

THIS is a remarkable pamphlet, and as a statement of the workings and belongings of the Alliance and Consumers' Gas Company, it cannot but command the public notice it deserves. This exposition of the management—the unlucky and unfortunate management of the Gas Company—is addressed to the shareholders by a committee of the same, who in defence of their own interests and property, have been driven to take immediate action. The Directors have endeavoured, with a high hand for some years, to have all the management and contracts carried out in that way that best suited their own interests. Any one reading the present careful and temperate statement need not be at all surprised at the late attempted transfer striven to be carried out by the Corporation Purchase Bill. Had that bill been carried, the shareholders would certainly have been “taken in and done for,” while the principal officers of the company might retire into private life on their splendid allowances, secured at the cost of the shareholders. Only think of it—the Corporation measure provided retiring annuities of £100 to each of the Directors, and a £1,000 a year to the Secretary! The astute solicitor of the company was not forgotten; but this is not to be wondered at, for when did ever a lawyer neglect looking after his own interest? Rats may desert a falling house, but compensation is the prerogative of speaking animals, whether they be supervisors or law advisers. It is worth noticing that the same engineers who reported on the Belfast Gas Works, examined and reported upon the value of the Dublin Company's Works.

The share capital of the Belfast Company is £200,000 all paid, and the money consideration which the shareholders received, or are to receive, by the sale of their works, is £388,550, equal to 21½ years' purchase of their statutable dividend, or £93 5s. per cent. premium on their shares. The Corporation, on making the purchase on the terms mentioned, would only realise a profit of £8,881 per year, after providing for interest at 4½ per cent. on the purchase money. In the case of Dublin the estimates of the profits which might be realized by the Corporation through making the purchase on the terms proposed, the three estimates given show, that after providing 6 per cent. interest on the share capital, and 4½ per cent. on bonds, there would remain a profit to the Corporation, variously estimated at £36,554, £47,618, and £66,911 per annum.

According to another engineer, Mr. Church, in his examination before the Committee of the House, he valued the company at £1,391,600, or £448,100 more than the £943,500 for which the Directors agreed to sell it to the Corporation.

Messrs. Cleminshaw and Pritchard's valuation amounted to more than this, being put down at the sum of £1,448,824. These

figures show a difference between Belfast and Dublin which could not be accounted otherwise than unsatisfactory to the Dublin shareholders. In the Belfast case the shareholders' interests were attended to, and there was no provision made for compensating directors or officers, as we have shown to be the case in the Dublin Company. Despite the unpromising condition of the latter company at present, the shareholders have every reason to feel satisfied at the collapse of the Corporation measure. A most imperfect and ruinous system seems to have been employed at the Brunswick-street works for some years in the distillation of coal. Both in the carbonization and distribution departments, matters have been long going on from bad to worse. The sum of £116,740 has been expended on the Dublin works from the 80th of June, 1869, to the 31st of December, 1872, which has been charged to the capital account. This outlay of money has not put the works into a state of greater efficiency. The shareholders will be obliged to spend several thousands more under the advice of experienced gas engineers before the Dublin works can be placed in a proper working condition.

In the pamphlet under notice there is certainly a clear exposure of the results of the past management of the company, but there is still a further exposition necessary before the public are placed in full possession of the whole facts relating to the management of the Dublin Consumers' Gas Company. It strikes us that the shareholders themselves are greatly to blame for having allowed matters to proceed so far. A rigid inquiry should have been instituted long since, but we can easily understand why matters were permitted to remain so long as they have remained. Our opinions on this head are better unexpressed.

Co-operation in the Civil Service. By Charles H. Brien, F.R.G.S.I., A.R.I.A.I. Dublin: Office of the IRISH BUILDER.

THIS is a republication of a paper read before the Irish Civil Service Literary Society in the early part of the year. The pamphlet is well worthy of perusal, and it will be found of value to others besides those for whom it is particularly intended. The success of Mr. Plunket's resolution in the House of Commons has carried one of the points advocated by Mr. Brien a step nearer to its solution. We are, however, not very sanguine that the Irish Civil Servants' grievances will be redressed in the manner desired by the proposed inquiry. The Irish departments have been long badly treated, and we can see no valid reason why they should not in the matter of salaries and compensation when retiring be put on an equal footing with their brethren across channel. In the matter of Civil Service co-operation *per se*, there is much that might be usefully written. The question of Civil Service co-operative trading is a sore point, and it has its dangers, if carried too far. We quite agree with Mr. Brien in several of his remarks. “The Civil Servant (says our author), with his fixed income, and prepared to pay in cash, had a perfect right, if possible, to secure a portion of the advantages which the retail trader appropriated to himself. While I say this much, I protest against a development of the system on the part of the service, so as to overstep limits which its own interests should have clearly fixed; and I may be permitted to express the opinion that all unnecessary antagonism as respects the trading classes should be scrupulously avoided.” In England the limits are overstepped, and hence the bitter feeling that exists between the traders as a body and the Civil Service retailers. We have not time at present to enter into the whole question as touched upon by Mr. Brien, but at the same time we can commend his pamphlet to our readers and the public at large as a temperate statement of the matters affecting the Civil Servants here and elsewhere in Great Britain.

The Masonic Magazine: a Monthly Digest of Freemasonry. London, Liverpool, Glasgow, and Dublin: George Kenning.

THIS is a new monthly magazine, issued from the same office as *The Freemason*, a weekly organ of the Brotherhood. The new venture is creditably printed and written, and we have little doubt but it will make its way among the craft as a monthly compendium of Freemasonry literature and intelligence. It is not generally known across channel that as far back as the latter end of the last century, a creditable monthly serial was published in Dublin, entitled *The Sentimental and Masonic Magazine*. Though not devoted exclusively to Freemasonry questions, there were several articles and poems of merit published in its pages from time to time in relation to the craft. Thomas Moore, the poet, contributed to it when a boy in his teens, and that unfortunate and wayward genius, Thomas Dermody, who might, in one sense, be termed the Chatterton of Ireland, also contributed poetical pieces. There are some remarks of a historical character in the new magazine which we are inclined to combat, but we have not space to enter upon the subject in our present issue. Though not Masons ourselves in the Free-mason sense, we are tolerably well acquainted with architectural masonry and its belongings, and ancient guilds of trade. In building up a theory, as in building up a house, a safe foundation is a first requisite, and then reliable materials. We have a great respect for the modern Mason guild, their unity, charity, and other humane efforts, but we fear that the enthusiasm of some of the literary brethren has led them to go beyond their depth in seeking for the claims of their order. Between the Masonic and other trade guilds of the middle ages, and the modern guild of Freemasonry, there is very little in common. The distance is great, and the changes worked are greater. The symbolism still exists, and perhaps in an enlarged form, but the ancient spirit is gone with the craftsmen-architects who evoked it.

THE CITY SCAVENGING DEPOTS.

SEVERAL days since a memorial was forwarded to the Lord Lieutenant from a number of the inhabitants of the city and the Kilmainham township, complaining that a nuisance was created by the deposit of the street sweepings in a field purchased by the Corporation for that purpose on the outskirts of the city, and adjoining the Kilmainham Gaol. The memorial was forwarded to the Local Government Board, by whose direction Captain Robinson, P.L.I., attended yesterday at the Court-house, Kilmainham, to hold an enquiry. Mr. J. O. Byrne, instructed by Messrs. Smith and Barry, attended for the Corporation, whose officers were present to show that no nuisance existed from acts of theirs. On the sitting of the court Mr. Cooke, secretary to the Kilmainham Commissioners, stated that the memorialists were quite unprepared to proceed with the investigation. The Corporation had thought fit to appear there by attorney and counsel. They (the memorialists) had been under the impression that the enquiry could have been conducted by themselves, without the interference of professional gentlemen, and accordingly had not instructed attorney or counsel. Under the circumstances, they would decline to give any evidence on the subject-matter of their complaint, but would instruct their solicitor to take the opinion of counsel as to what should be done for the purpose of instituting legal proceedings against the Corporation. Mr. Byrne deprecated the course that had been taken by the memorialists. They had made a most serious charge against the city officials, prompt action had been taken by the executive upon that complaint, and now a retreat had been beat, and they were threatened with legal proceedings. Be that as it may, however, then or hereafter they would show by their medical officer and others that no nuisance existed such as was alleged.

Captain Robinson said his instructions were to inspect the place and take evidence as to the matter of complaint. Since, however, the memorialists withdrew refusing to give evidence, his duty was at an end. Mr. Cooke said they must decline to give evidence, but they had it; the Corporation would doubtless hear from their solicitor on the matter by an action at law.

Whether the nuisance existed at Kilmainham to the extent alleged we are not prepared to state; but we have no doubt if timely action had not been taken the nuisance would have extended, judging from what has previously taken place in other directions where scavenging depots had been established.

THE DROGHEDA SEWERAGE.

THE sewerage of this important town requires attention, and the sooner it receives it the better for the safety of the inhabitants. The borough engineer, if not badgered by the town council, can perform no better work than devoting a little extra labour to the drainage of the town, which appears as yet to be very defective in some places. A correspondent writes that in Shop-street and Laurence-street not only are the sewer gases constantly escaping, but that the sewers are flooded with pestilential filth and water. The dwellers in the houses on the line of these sewers stand in constant danger of attacks of typhoid fever; and if an outbreak of this malignant disease should occur, there is no knowing what fearful havoc it might make. If the council does not move in the matter, the Local Government Board will certainly enforce its powers. Let the medical and other officers do their duty without fear or favour, and public opinion and the law will support them. A few days of very warm summer weather might work a calamity that would not be forgotten for many years. Bad sewerage is a scandal to any town; and, if only for self-preservation's sake, the Corporation ought to possess a presence of mind, as death strikes indiscriminately.

On the same subject the following communication, addressed to the chairman, was read at the meeting of the Board of Guardians on Thursday last:—

1 Laurence-street,
10th July, 1873.

SIR—Desirous to adopt every means to abate the abominable nuisance of the sewerage of Laurence-street and Shop-street, I respectfully address you as chairman of the Drogheda Union with a view of inducing you to ask from the medical officer of the district an official report of the state of the sewerage there, and its effects, as came particularly, although casually, under his observation within the present week. Dr. Kealy being under the impression that notwithstanding in his opinion the nuisance is calculated to actively engender typhoid fever, yet, that unless asked by the Board for a report, it is not within the scope of his instructions to offer one. For many years past, the basement storeys of the adjoining houses have been flooded with fetid pestilential filth, the leakage from the main sewers, which are on a higher level than the cellars; the case which came under the medical gentleman's observation, No. 1 Shop-street, Mr. Callaghan's, a depth of about four feet had accumulated before it was removed by the corporate officer. I may also mention that in the last visitation of cholera amongst us, that house was, I believe, the first attacked; and Mr. Charles McCabe and his wife, the then occupants, were amongst the first victims, being carried off dead in a few hours. Some of my own nearest relatives also succumbed ten years later, in an adjoining house where the average depth of two feet of such leakage was constantly present. The Corporation have been repeatedly memorialized on the subject, to have the sewers deepened, without any effect, although that body have acknowledged the necessity, which exists for having it done, by placing a resolution on their records to carry it out; but years have elapsed and it is not done. A copy of this communication will be forwarded to the Local Government Board.—I am, sir, your obedient servant,

RICHARD HARVEY.

In reply to the chairman, the clerk said that matter came entirely under the cognizance of the Corporation, but he believed

the Local Government Board are the superior power; and if Dr. Kealy sends in his report, they may act on it, and order something to be done.

Since the above was in type we learn from a correspondent that at a meeting of the Corporation held yesterday the neglect of sanitary measures in relation to the sewerage of the town was brought before them. Several communications referring to the subject were read, one being from a solicitor, informing the Corporation that he was instructed by a client, Mr. P. Callaghan, to institute proceedings for the recovery of £150, "as damages sustained by him through their negligence in allowing a certain sewer in Shop-street to fall into and remain for a long time in such a defective state that his premises were frequently inundated with offensive sewage, by reason of which he sustained serious detriment in his business, health, and otherwise." On the motion of Mr. George Knaggs and seconded by Mr. Wm. Whitworth, a report and plan of the sewerage of the town was ordered.

CIVIC LYRICS.—No. XLI.

LET DUBLIN REMEMBER.

(Air—The Red Fox.)

Let Dublin remember the brawlers bold
Who for sundry years betrayed her;
And who still, tho' waxing both grey and old,
Are proud of what they have made her.
With a plague pall o'er the city unfurled,
The Council, who shirks no danger,
Are filling a niche in the western world
Undisputed by foe or stranger.

On the Liffey's banks when the citizen strolls,
When the coal-black tide's receding,
He sees the water rats and eels in shoals
Out upon the mud banks feeding;
Then the Council sends for a sack of lime,
And the sewage is sprinkled over,
Pending the great convalescent time
That the crack of Doom may uncover!

CIVIC.

"UNKNOWN DUBLIN."

"THE Oldest Inhabitant's" compliments to Mr. O'Flanagan. He very much regrets that pressing private business has prevented him from keeping his usual appointment, in meeting his friend and acting as his cicerone in his agreed-upon visit to another quarter of Unknown Dublin. On or before the 1st of August he hopes to be at his post, and that all interested will be satisfied.—Signed on behalf of the "O. I." by M. P. O'F.
[Imprimatur.—ED. I. B.]

WERE THE CELTS OR THE DANES. THE FIRST DISCOVERERS OF AMERICA?

CHRISTOPHER Columbus seems likely to be robbed of his laurels. The controversy is again renewed as to the original discoverer of America. The proposed commemoration of Leif Erikson as the original discoverer of the New World is noteworthy. According to the *Globe*:—

"The entire Norwegian case, however, seems to be that the great Genoese was an impostor, who stole his grand idea in Iceland, and has hitherto enjoyed an undeserved reputation on false pretences. The history of the matter is stated as follows:—According to certain Icelandic sagas, translated for the first time in 1827, one Bjarné Herrjúlson, a Norwegian, was on his way to Greenland in the year 986. A storm drove him southward to the American continent, which he called Vinland. Subsequently, Leif Erikson, who had discovered Greenland in 984, bought Herrjúlson's ship, landed in New England with 35 men, and wintered near Fall River in Massachusetts. Seven years later, Thorson Karlseyne and others left the "Dighton Writting Rock" Inscription. In 1002, Thorwald Erikson reached "Vinland," was killed by an Indian arrow, and buried at a spot now called Garnet Point. The skeleton in armour found there many years ago, and celebrated by Longfellow, is alleged to be that

of Thorwald Erikson. The last of these expeditions, of which there were many, took place in 1347, and the suggestion is that Columbus, during his visit to Iceland in 1487, obtained this knowledge of "Vinland," which the men of the far north had hitherto kept to themselves. If this were the case he would naturally have urged such historical authority in support of what were set down as his crazes, and Columbus was certainly not the man to hide anything for self-glorification. Something practical, however, may come out of the controversy. The people of the United States are anxious to have a national name, and are drifting more and more into envy of the antiquities and associations of the Old World. Why should they not call their country Vinland?"

Irish historical students are called upon, in our opinion, to take up the question of the discovery of America. It is a question on which a good deal may be written; and a very fair claim may be advanced that the Celts established the first settlements in America. Several of the northern sagas, and other MSS. written in the Icelandic and Norwegian language, afford strong testimony that both the Irish and the Danes, as early as the tenth century, if not before, established colonies in the New World, the discovery of which has been claimed so long for Columbus, Americus, and Sebastian Cabot, towards the end of the fifteenth century.

We may take up the subject on another occasion, but at present we invite discussion upon the part of our historical students. We would refer those interested in the controversy to some old works: "Historia Vinlandia Hafniæ," 1705; Foster's "Voyages;" Adam Von Bremen's "Church History;" "Historia Vinlandia Antiquæ;" "Veteris Greenlandia Descriptio," 1706.

There is an account existing of a Welch settlement being effected in America, also mentioned by the Welch bards, Cynric ap Grono, Cythen Owen, and Sir Meredith ap Reese, of the fourteenth and fifteenth centuries, and other Welch MSS. prior to the period of Columbus. See "Anthologia Hibernica" for December, 1793, for some notes on the subject.

THE ARCHITECTURAL COURT AT SOUTH KENSINGTON.

THE new Architectural Court at South Kensington was opened for private view on Thursday last. Though less garish than other courts, the department will afford much interest and instruction to art-students and others interested in the progress of both science and art. It is the outcome of the design and superintendence, we believe, of Major-General Scott. It is a spacious structure, with a semicircular glass roof, the spring of which is 72½ ft. above the ground. Last night the building was lighted by jets round the outside of an upper gallery. There are a central corridor, and a court on each side 135 ft. by 60 ft. Some exquisite mosaics are placed in the central corridor, representing Roman, Venetian, and Florentine work of very ancient date. There are also a number of modern imitations, notably a portrait of George IV., after Lawrence. The corridor is paved with mosaic in marble, designed by Mr. W. F. Moody, and made by female convicts under the direction of Major Du Cane. In the Eastern Court there is a perfect specimen of a pulpit taken from an Arabian mosque. It represents the florid Arab art which was still in great beauty in the fifteenth century; and although time has done its work upon the fine wood carvings inlaid with ebony and ivory, many traces of the original painting and gilding remain. In the same court there are a beautiful wrought-iron screen from Hampton Court Palace, the work of Huntingdon Shaw, the Nottingham blacksmith, about 1695; and plaster casts of the shrine of St. Sebalders (16th century); of St. George and the Dragon, from the Palace at Prague (14th century); a tomb designed by Albert Durer, and erected by Visser in 1508; a fountain from the old Palace garden, Munich (17th century); a Flemish font (15th century); a porch illustrating Mogul art (16th century);

the Eastern Gateway of the great Buddhist Tope at Shanghai, erected about the commencement of the christian era; a curious iron column at Delhi, and other similar casts. One of the end walls is covered with painted sketches of all styles of architecture, beginning with Gilbert Scott's Albert Memorial, and retiring through the ages to the Temple of the Winds, Athens (B.C. 860). The central object of the Western Court is a gigantic cast of a portion of Trajan's Column (A.D. 110). There is here also a remarkable cupboard from a house in Toledo (14th century). Another great example of Spanish art is an altar painting (15th century), representing the legendary history of St. George, brought from a destroyed church at Valencia. The most elaborate of the many casts on this side is that of the Schneyer monument, at Nuremberg (A.D. 1582). It is a piece of sculpture crowded with figures, and representing, in minute details, the leading incidents of the Crucifixion. Almost monopolizing a dozen feet width of the south end of the court there stands the rood loft from the Cathedral at Bois-le-Duc, North Brabant; a very rich specimen of French marble work (date 1623).

THE FINE ARTS.

An altar-piece attributed to Murillo was sold at the auction rooms of Mr. Phillips, Bond-street, on Friday last. The picture, whether really the work of that great master or not, is a very fine one. Half a century ago it was exhibited at the Egyptian Hall, Piccadilly. The parties who have disposed of it have had it in their possession since 1822. It was purchased at that time, we believe, by a Mr. Flintner from the guardians of the convent of Capuchins at Cadiz. The account as given in a daily contemporary in London describes the picture as nearly square, measuring 7 ft. by 6 ft. 6 in. The figures are life-size, St. Anthony being represented kneeling with outstretched hands towards the infant Saviour seated on clouds, borne up by cherubs with two angels, one on either hand, and a third a little behind; above, and at the left corner of the picture are other cherubs in glowing light, while below appears an evening sky with landscape, and in the foreground are a book and lily. The general tone of the picture is reddish, as though it were painted on a red ground, which has in course of time told upon the colours, and some want of transparency and brilliance may be accounted for by the dulness of the surface caused by its having at some recent time probably been treated with some reviving mess or other at the hands of a restorer more confident than experienced. In its present condition, therefore, it is quite possible that much of the beauty of the original is thus obscured, and it is undoubtedly a fine work. According to the history given with the picture, it was painted by Murillo about the year 1650 for the Capuchins in gratitude for their great kindness to the suffering brother of the painter. If so, it was about thirty years before he painted the large altar-piece of St. Catherine for their church, to which it will be remembered the sad interest attaches of his having fallen from the scaffolding while painting at it, and being so hurt that he was compelled to return to Seville, where he died soon afterwards, in April, 1682, leaving the work unfinished. If the date of the picture be correct, as there is no reason to doubt, it would account for the difference that the work shows from the great masterpieces of the painter, in which he assumes so decided a style of his own, such as "The Pool of Bethesda," the "Abraham and the Angels," and others well known, the two mentioned being in the collection of Mr. George Tomline and the Duke of Sutherland. For the same reason, perhaps, may be explained the singular resemblance to the manner of Vandyck, who exercised considerable influence over a young painter, for Murillo would be then only in his thirty-fourth year. The subject was not a favourite one with Murillo, for out of the 46

pictures by him in the Madrid Gallery not one refers to St. Anthony. One of the few instances is the picture of the Rogers' collection, now belonging to the Baroness Burdett Coutts, which represents St. Anthony kneeling before the infant Saviour, holding a cross and globe.

PARLIAMENTARY.

THE DRAINAGE OF THE SUCK.

In the House of Commons on Thursday, Major Trench asked the Chancellor of the Exchequer whether, in the event of the purchasers and occupiers of land on the river Suck agreeing upon the plan of draining the river Suck, they would receive the aid of the Government?

The Chancellor of the Exchequer—I can give no answer on the subject.

Major Trench then gave notice that, on the motion to go into supply, he would call attention to the circumstances under which her Majesty's Government had prevented the drainage of 72,000 acres of land, and move that the course of action pursued by her Majesty's Government is most prejudicial to the interest of a large agricultural population, and calculated to discourage that spirit of self-reliance and enterprise so necessary for the development of the resources of Ireland.

THE ANCIENT LAWS AND INSTITUTES OF IRELAND.

"The Ancient Laws of Ireland, or *Senchus Mor* (conclusion)—being the *Corus Bescna*, or Customary Law: the Book of Aicill,"—is now published and before the British public. The joint editorship of the volume was performed by the Rev. Mr. O'Mahony, Professor of Irish in Trinity College, and Mr. Richey, Q.C., Deputy Professor of Feudal and English Law in the same institution. We have not been furnished with a copy by the publishers, but we propose; however, on an early occasion to have our say upon the execution of the work.

KILKENNY CONTRACTORS.

Mr. Burtchaell, the County Surveyor of Kilkenny, in his report read to the Grand Jury, makes some amusing statements, but they are nowise singular. The general run of Kilkenny contractors who undertake county jobs of making roads, building bridges, and doing other work, must be a rare lot. It would seem they study the plans upside down, and then only when the work they have undertaken is half-finished. Some of them have a supreme contempt for anything on paper, except it be one of their own bills "for something on account." Just listen to a short extract or two from Mr. Burtchaell's report:—

"The system of giving contracts to the lowest bidder, which is compulsory by Act of Parliament, provided good security is given, has almost completely driven away respectable contractors of experience from tendering; consequently, it is nearly impossible to get work creditably performed, yet payment cannot, perhaps, be ultimately refused.

"We have almost ignorant men taking large contracts for new roads, bridges, and general mason work. A good mason who understands his business and knows the value of work, seldom gets a contract for masonry. Plans and specifications are seldom looked at, or at least understood until after the work is commenced.

"A new road was presented for at last assizes, on which there is a small skew bridge to be built, and a good deal of cutting and filling, for all of which detailed plans and sections were, as usual, prepared previous to the advertisement for tenders. The contractor who took up this work, and who had not provided himself with a copy of the specification, came to me a few days ago to ask me should he take the grass off the line of road! He also informed me he never built a bridge or any masonry.

"The *Feroda* new road, which should now be completed, is not more than one-half done. This contract was taken for £200 less than the amount allowed, which was over £1,000. An unskilled

person would find the work much more expensive to execute than a man of experience. It would require considerable skill to carry out a work of this kind, yet the contractor never was employed on similar work; consequently, I fear, it will not be well finished. . . .

"The contract for making flagged footways in the town of Graignamanagh has also been badly managed, and is still incomplete, although it should have been given up at last assizes.

"Three small works have not yet been commenced, although they should have been completed two years ago. These, as well as all unfinished work, will appear in my general form of 'Progress Report,' which will be laid before you.

"The painting of New Ross Bridge, passed at last assizes, has been completed, but is not yet taken off the contractor's hands.

"Some inconvenience has been experienced in consequence of the unfinished state of Cappaghayden Bridge, which I have not yet been able to get completed; and I believe the contractor was disappointed in private assistance he was led to calculate upon in aid of the presentment."

The above exhibits the nice state of the contract system in Kilkenny.

The Grand Jury should invite a score of "Jerry Builders" from across the Channel. They understand plans at least, and will build *a la mode*; but they will not undertake to keep their work in repair, for wise reasons of their own. Kilkenny, after all, is a lively place for getting on in the world; and the "Boys of Kilkenny," particularly the contractors, are "stout roving blades."

THE ALLIANCE GAS COMPANY.

The requisition adopted at the recent meeting of shareholders in this company has been signed by holders of stock representing over £120,000. It calls upon the directors of the company to summon an extraordinary meeting to consider the present state of affairs. Should the Board refuse to accede, the committee will do so after the expiration of twenty-one days from the lodgment of the requisition, which took place yesterday at the office, Grafton-street.

THE BUILDING TRADE.

A CONFERENCE between the London master builders' association and the masons, with the view of averting a strike, was held yesterday. After three hours' discussion the meeting broke up without being able to come to any settlement. The London master builders, after an interview with the masons' delegates, met the carpenters; but this meeting also terminated without result. The masters offered to concede the halfpenny per hour demanded by the men, and to allow them to leave work at twelve on Saturdays, but stated they could not possibly pay before one o'clock, and offered to refer this point with some others to arbitration. The delegates, however, refused to recommend the men to accept these terms, and the masters expressed their determination not to meet the delegates again unless they were authorized to accept the terms. It is feared that the strike will commence on Saturday. Last night the masons held a mass meeting at Wilcox's Rooms, Westminster Bridge Road. The delegates reported the result of their conference with the masters. Resolutions were then passed by the meeting, appointing delegates to wait upon every employer, stating that the masons would all strike at noon next Saturday, unless the ninepence and the 12 pay-time be conceded.

In Ireland, Belfast furnishes an instance of the unsettled state of the building trade. The long-expected strike in the carpenters' trade took place on Saturday week, the men having been refused their demand of a halfpenny an hour for both classes. The masters offered a farthing an hour, but the men declined to take it, and a strike has resulted. Much speculation has taken place as to the judiciousness of this step at a period when there is a slackness in the building trade, even in Belfast, which is growing so rapidly.

CURRENT LITERATURE.

THE MAGAZINES.

THERE is no dearth of magazine bards or reviewers at present. Every month produces a falling star in the literary market—a new rhymist, and prospectuses of shadows that are never embodied. Several of our old magazines hold their own, and others less aged appear to be getting a grip on the public.

Blackwood of this month affords us another instalment of the "Parisians." A paper on "Marriage as a Trait of French Life" is a somewhat remarkable article, and affords agreeable reading for many tastes. "The Four Ages" is a good picture of the four seasons of human life. The other articles of merit are "The Rate of Discount," and "Alexander Dumas."

Tinsley shows an improvement on last number. "A Pair of Blue Eyes" still enthral, though not far removed from the objectionable sensational literature. The other articles worth reading, and some of them very interesting, are—"Sport in the West," "On the River," "The Husband of a Female Cynic," "St. Lubbock's Day."

Frazer is an excellent serial this month, and contains some articles of remarkable interest. Professor Max Muller gives a learned critique on Darwin's "Philosophy of Language." Florence Nightingale supplies a paper on "What will be our Religion in 1999." It is a thoughtful paper. There is a pleasant paper, entitled "A Tour through Gaelic Ireland in 1872." Two other articles are also worthy of perusal: one on Froissart's "Chronicles," which is replete with information. "The Critique on the Royal Academy Exhibition" appears to be a discriminating one.

The *Gentleman's*—the oldest of all our serials—though of late years in a new dress, affords a large amount of useful and interesting reading. The serial tale, "Clytie," is continued. "The Early Days of Napoleon III." is a German translation by the Countess Harrington, and contains many details of interest. Mr. David Ker, who lately acted as the Khivan correspondent of the *Daily Telegraph*, and may be acting still despite the announcements of the proprietors of that paper, writes a pleasant paper, entitled "A Strange Experiment," supposed to take place in the Imperial Library, St. Petersburg. The other articles are "Seals and Signets," by Mr. Hutchings, and a small story by Mr. Hopkins, "Making the Worst of It."

Macmillan. There are some good papers in this month's number. Irish readers will be amused by Mr. John Ball's article on O'Connell, social and political. Mr. Ball deals some blows to some of our present agitators in his paper, for which the "Home Rulers" will remember him. Mr. Black continues his capital tale, "Princess of Thule." Medical Reform comes in for notice from Professor Young. Manzoni's genius is estimated by Miss Phillimore. Mr. Burnand talks of "My Time and what I've Done with It." We hope he has personally made good use of it, and its application has been profitable to him.

St. James's is light and readable. "Who was the Duchess," and "Ruth's Sacrifice," are two stories well told. "The Royal Navy versus the Sultan of Zanzibar" and "Southampton Railway" are practical papers, affording useful information. The number on the whole is a fair one.

Belgravia commences with a new serial, "Village Tyrant"—a dramatic story by Mr. Joseph Hatton—it begins well. George Augustus Sala continues his "Imaginary London" with a good display of satire, and an exposition of the sins of London city life. Who knows it better than the great George Augustus, who possessed the power of Sir Boyle Roche's bird? Mr. Guy Roslyn contributes a "Dream of a Dream" on love and buttercups, sweet brooks and shady places, and the dear old illusion that must be dispelled when age creeps on.

Cornhill is not so good as usual. "The

Planet Mars" is, however, a capital essay. We trust the opening story, called "Young Brown," will get better as it proceeds, or some snarling critic may write it down, "Done Brown." There is nothing very remarkable in the remainder of the articles in *Cornhill* for this month.

St. Pauls is full of criticism. "Art in the Higher Alps" is the name of a paper by Mr. Morris. "Browning's Balustrade" forms the subject of a somewhat able paper by Mr. Hassell. "The Weather and the Sun" is dealt with by Mr. Proctor with his usual ability, on cognate subjects. The paper is worthy of careful perusal.

The *Fortnightly Review* has a paper by a General Cluseret, not unknown in Ireland, entitled "The Military Side of the Commune." The paper is worthy of consideration notwithstanding the antecedents of the writer, who has been looked upon by many as a fanatic. "The Abortiveness of French Revolutions" is the name of a paper by Mr. Cotter Morison. Both the above papers should be read by those interested in the subject of revolutions in general or particular. "A Lost Art" deals with the subject on art of photographing colour as well as outline. This art was said to be invented during the last century, and suddenly disappeared. We believe it is capable of being reproduced, and requires only a little study.

The *Home Journal* is one of our new magazines recently started, and it promises to make way. The matter is good, but the paper it is printed on is open to improvement. Miss Braddon writes one of her vigorous stories, "Publicans and Sinners," which is not without interest. Mr. Mortimer Collins contributes a good poem, "True Delight." Sports and pastimes are discoursed upon by Mr. Henry Kingsley. The new magazine is very readable, and somewhat American in its mechanical get-up.

THE POPULAR ESTIMATE OF ARCHITECTURE.

THE above was the title of a lecture recently delivered at the Architectural Association, London, by Mr. F. Chambers. The following portions of the address appeared in the columns of our contemporary the *Builder*:—

1. *As to Doctors and Architects*.—There is some analogy between the profession of medicine and that of architecture. They profess to preserve the sound mind and healthy body; we, to fit that body with a dwelling suited to its wants, and to adorn it as far as it is capable of ornament. They aim at repairing the ravages of time and disease upon the earthly body; we desire to preserve and conserve the dwelling we have designed, that it shall endure and increase in beauty as in age. The doctor is an expert—he has inmost knowledge of the details of the construction he has to work upon; for us, also, a knowledge of the anatomy of the dwelling is still more necessary. The medicus is not the chief workman, he deals with a thing created. The architect is, as far as man can be, a creator. The house first conceived in the mind grows into being at the touch of his wand—a thing of beauty perhaps, but possibly a Frankenstein—an abortive monster, to hurt and pain him years after its birth, to remain an incubus upon him, haunting him, upbraiding him even in his dreams. He cannot scratch it out, erase it; not even a recording angel can blot it out, unless it fall of its own instability, or the merciful fire-spirit destroy it. The medius guesses where he cannot see, and if he makes mistakes he shifts the blame; the architect dare not guess—a false step once made is fatal to his fame. The doctor blunders and stumbles in the dark recesses of viscera and cloacæ, the patient dies, but the much-enduring Mother Nature bears the blame. Not so with us; for every incident that befalls a dwelling, it is the architect that is dragged prisoner to the bar. It is on our defenceless profession that the favour of

the press has a special tendency to burst. Whether it be a question of snow melting on the roofs, percolating the slates, and spoiling the newly-decorated drawing-room ceiling; of the pipes bursting from the late hard frost, and inundating the bedroom in the pleasant dawn of a dark December morning; of the swarm of saltatory parasites that detract from the mid-summer night's repose of Broadstairs or of Eastborne; if the water supply be defective, or the gas flickers; if brick walls on clay foundations crack; if the cook has caught cold from sleeping too soon in the new wing, or the groom has typhoid fever, probably from sleeping in an underground closet about the size of a cistern, it is always the architect that is transfixed by the spasmodic sentences of the irate paterfamilias. It certainly is the popular impression that every dwelling-house has been designed by an architect, and therefore that he is the proper victim to crucify for every evil that befalls a house. He it is that stands like an evil genius behind the plumber mending a pipe, and guides his hand to give a dig at another near it that it shall soon develope into a burst. He puts the pipes where frost assails them; arranges the roof to retain the snow as it melts, in a sort of hopper, from which its only escape is through the ceiling; or imitates nature by contriving a series of slopes that result in an avalanche on the conservatory just as the azaleas are in bloom. It is the architect who places the nursery over the best bedroom, in order that the pattering of pink feet may encourage in our visitors the good habit of early rising. He locates the kitchen so that the preliminary sniff of cookery may give the guests that general prophecy of the menu so provocative of appetite, and the w.c. so that its soft echoes resound on the boudoir, and its *aure* add a perfume to the staircase. Whose fault but his that the coal-cellar is well lighted and ventilated, and the larder is a veritable black hole; that the kitchen makes a torrid zone of the kitchen; that the staircase compels a single file? Now these things have no counterpart in the profession of medicine. The doctor is accepted as a sort of priest. He is supreme; he dictates. If he is wrong in his diagnosis,—alas! human skill is not omniscient,—he did his best. Who can avoid the inevitable? His position is firmly taken: he has respect. The supreme ignorance of the laity in physiology raises him, and his decrees have the force of a fiat. But everybody is the critic of the architect. Man is a building animal; the instinct of building is strong in him, as in the beaver or the ant. His earliest play in infancy is to build a mud hut, his first toy a box of bricks. His latest aim, if he prospers, no matter what his occupation, to build himself a dwelling. His enthusiasm takes the form of building, from the huge stones piled up in uncouth circle to mark the site of a battle won, or the spot where lies the body of the dead chieftain, to the college which commemorates Keble, or the gigantic sewer with which a transcendental admirer of Wellington proposed to make his name and fame immortal. Above all, the religious zeal only fully satisfies itself in building a shrine, a temple or a tomb. Sacrifice to God has done more to cover the earth with works of beauty than all other impulses to build. Destroy the temples, cathedrals, the churches, the shrines and crosses in the market-place and the wayside, and you may walk through the ruined cities as in a garden where the first frost of winter has swept each blossom from its stalk. And this religious zeal makes of its devotees students and art critics. It is the fashion to assume a knowledge if they have it not, to affect the air of a connoisseur, and vex and worry and goad the victim who has ventured to design the church or the village school, until he envies the peaceful life and calm dignity of the parish beadle. The doctor has his assured position; the architect has none.

2. *As to a Client's Appreciation of Services*.—Have you the consciousness of having done your utmost for a client, of having really

succeeded to your own satisfaction, in fulfilling even the exactions of your own oversensitiveness, and then opening the letter which you blindly expect is a little compliment thrown in as a make-weight to the hardly-earned commission:—"Dear Sir,—In the house which I have built at so much cost and trouble, under your direction, I at least expected not to have been annoyed as I have been in the first month of my occupation. My cook complains of the great distance at which you have placed the dust-bin; of the draught in the larder, which gives her cold whenever she has to fetch the meat. One of the large plate-glass sashes in the drawing-room is smashed to atoms by the wind slamming the door. The w.c. on bedroom floor has been choked with a scrubbing-brush, which was accidentally thrown down it; but surely you should have guarded me against such a casualty. The painters' work is positively scamped. I find they have not touched the inside of the keyholes, and have left that part of the window frames where the sashes slide, and which they supposed out of sight, without a trace of paint. I certainly looked to you to save me these annoyances, and must confess to some disappointment. I hope you will at once come down," &c., &c.

8. *Why Architects are not honoured.*—Because of their unrecognised status—their imperfect, irregular training—the want of appreciation on the part of the public of their art and of their services, and the want of division of labour amongst them. The contrast between the nature of the several distinct and very different works which they profess simultaneously to undertake.

4. *As to Education of Architects.*—What can be more promiscuous, more uncertain, than the change which directs most boys into that groove of which the architect's office is the first station? What decides the eventful question, Shall the boy be an architect? Rarely the bent of his taste and fancy; more rarely some evident proclivity and aptitude; generally, much as a boy is made a priest, because there is a chance of a living to be had: so the boy is destined to the T-square, because there is a connexion dimly looming in the future, or the interesting drawings duly sent home at the holidays—sweet studies of decayed barns and waterbutts—show such taste for drawing; or, "My son has some fancy for carpentering, sir, so I have thought of making him an architect. There is not one in the family." A month's trial to see how the boy likes it. A new experience—such fun in the office—the managing clerk, a comical fellow, who sings such comical songs when the governor is out—it is all fresh to him, and the work so smooth—he will be an architect, and the premium is paid, and the thing done. Alas! will he be an architect? There is the rub! He will trace drawings, and see them not; copy specifications, and no more read them than if they were sermons. Go forth into the buildings that are rising, and as a traditional joke say to the foreman of the bricklayers—"That's not bond." He will see stock bricks and iron girders in all variety, and to him they will remain stock bricks and nought besides. The principles of construction, the life-long fight against the forces of nature, the balance of equilibrium he sees not, cares not to see; and the three or five years pass in pleasantries, and perhaps a pretty drawing or two;—and behold our architect-elect! apt—fitted to undertake the work—to build the houses, the churches, the theatres, the schools of his generation. . . . If there were the same system in the nurture of that faculty which is to develop into the genius of the architect, which obtains in the culture of medicine or of law; if, in the first place, a year were passed in the builder's workshop, in the practical work of the operative trades, and the evenings in the school of the art-designer; if periodical examinations took place under the direction of some recognised corporation: let the second year be passed in the actual superintendence of buildings in progress; the third year in the study of the practical requirements of each variety of

building—the dwelling-house, the factory, the church, the school, the hospital, the hotel, the town-hall. Let him study, also, those questions of jurisprudence which now disturb and hinder our every step—Building Acts, sanitary laws, rights of light, rights of adjoining owners. All through this curriculum let the fine art, the æsthetic element be constant; let every pocket contain a pencil, and from the thumb-nail and the shirt-cuff let him every evening transfer his sketch of ornament, or some quaint conceit to the sketch-book. Let the workshop be what the hospital is to the young doctor; the office, the surgery; the building in progress, the clinical studies by the bedside of his patient. He will at the end of his probation have acquired a knowledge of the art of building; he will be fitted for better or worse to fill any of the many posts which the increasing demands of men for every variety of building are constantly creating.

5. *As to the many Occupations of Architects.*—Are architects lowered in the popular estimation—degraded, so to speak, of the high estate which of course we all think they are entitled to, by reason of the multiplicity of their calling, of their undertaking to do so many things so different, so contradictory in fact, in their character and dignity? A man has his brain full of visions of the best form of ceiling for the hall, the wall-surface of the new staircase, of that delicious bit of masonry which is to be the new drawing-room bay-window; he receives a note like this:—"Dear Sir—The smell we have noticed once before in our library certainly increases; it is evident there is something wrong in the drainage. Knowing the multiplicity of your engagements, I hesitate to trouble you with this matter, but if you are unable to come down at once and thoroughly investigate the whole system of drainage, I must apply elsewhere for that assistance which I feel, &c., &c. P.S.—It is not the slightest use your sending Mr.— (your managing clerk). I cannot have that confidence in his judgment." You all know what this means. It means that you must give up, not one day perhaps, but many days, to an interesting investigation of the ancient construction of our forefathers in the shape of drains under a country-house, whose every owner for two hundred years has added a cesspool or two to the ring, which, like the pearls around the emerald, encircle the ancient dwelling. You go down, at every sacrifice, but with the certainty that you can never make a charge which will at all repay you for the work; that the end of it may be utterly disastrous and unsatisfactory; that the accursed smell—born, perhaps, of the devastation of rats—may elude you like the will-of-the-wisp, and, beaten in the library, reappear—horror of horrors!—in the nursery or the boudoir; and yet you must do it, or you may find some other man has stepped into your shoes. He will (under cover of the smell) proceed to throw out the bay-window, to add the billiard-room, and the beautiful new staircase, and all these charming creations you had so happily carried out in prospective; and, worse than that, in six months' time, you read in the city press:—"We hear that Messrs. X. & Co. (X. being the drain-persecuted client aforesaid) have purchased a large plot of land in New Victoria-street, and are about to build new premises on a truly magnificent scale, which will prove a great ornament to our city. We understand the designs have been prepared by Mr. Malaria, the architect, whose sanitary investigations are so well known, &c., &c. Where are the limits of our knowledge to be fixed? An architect is indeed in theory the representative of omniscience—called upon to build a brewery, a printing-house, a college, a hospital. He must be primed at once with the varied requirements and internal organisations of each building; a fault in detail is a fault indeed. I built a large provision-warehouse a few years ago. My client said, "I want my smoking-room to be the best in London." I thought at first,—having a weakness that way,—of parquet floors and tiled walls, oak bench ends, deep angles tiled

lined, and all the accessories that would tell up in presenting to my client the perfection of a smoking-room. Utterly wrong; it had never struck me that it was not a room for the smoking in his leisure hours of Partagas and Intimidads that the City merchant desired should excel all others, but for the smoking of bacon and hams: hence a new study and exploration of all sorts of haunts, dim with the fumes of oak shavings, and the scent of salt pork. How strangely these diversities accrue! You pass from an hour devoted to the choice of drawing-room papers with Madame to take account of the dilapidations accrued to a dozen dens in Petticoat-lane. You climb down from the spire of one of Wren's churches, where the rusting of iron cramps has necessitated the reinstatement of the columns of the lantern, and pass on to Powell's, to select the stained glass for the library windows of some country-house; make affidavit of the injury to right of light of a scullery window in Doctors' Commons; and run down to Southall, to report whether so many thousands pounds can be lent on the security of the lease of a brickfield. It is impossible that any man can do all these things well. Michelangelo designed palaces, carved statues, and painted the ceilings. Can one fancy Michelangelo giving evidence as to rights of light, investigating the origin of a drain smell, reporting on the mortgage value of a brickfield? These multiplicities have originated from the complexity of our society, but they should no longer be encouraged. The excellence of attainment in one department is imperilled by the exigencies of all.

THE CITY BASINS.—SWIMMING BATHS.

In re city basins, Sir D. J. Corrigan, M.P., addressed a letter a few days since to Dr. O'Leary, who has commendably exerted himself in securing the old city basins as baths for the citizens. We can add but little more to what we have already written in favour of the project, which should meet with the support of the general public without distinction. Speaking of the object Sir D. J. Corrigan says:—

"Its success will be a great blessing to Dublin. I have seen in the papers that speakers at some of the meetings have gone into details that are, it appears to me, unnecessary at present, and perhaps, although quite unintentionally, tending to create difficulties. One of these has been the consideration of supplying the basins for bathing with Vartry water. I can see no good reason for entertaining at all the question of a supply of Vartry water.

"I suppose it would increase the expense considerably, and all unnecessary expense should be avoided. There is no analogy whatever between water for bathing and water for drinking. We bathe in salt water, but we do not drink it. Thousands bathe every year in the Serpentine, in London, and in the ponds about Dublin and in the canals, and no injury to health accrues, but they do not drink the water. The water of the two canals—the Grand and Royal canals—filtered in the roughest way, would be sufficiently good for bathing. I have a recollection that in some of the acts introduced giving power to the Dublin Corporation, there was a clause empowering the Corporation to erect public baths, and that there was even a negotiation on foot to erect them in Copper-alley, which was not carried out from the pressure on the funds for other purposes; but however that may be, I think the Corporation has full powers under the 12th and 13th Victoria, chapter 97, A.D. 1849, to convert these basins into baths. The clause lxiii. is as follows:—

"The council shall and may, subject to the provisions of this Act and of the Acts and clauses of Acts incorporated herewith, cause to be paved, drained, lighted, cleansed, watered, and otherwise improved, the borough of Dublin, and do all necessary acts for promoting the health and convenience of the said borough, and for that purpose may exercise all the powers vested in them by this Act and the Acts incorporated herewith."

"I think that not only will the Corporation, in carrying out your proposal, confer a great benefit on the health and habits of the people of Dublin, but that it will be a pecuniary profit; for, if we calculate that during six months of the year five thousand persons will bathe each week at one

peony each, the return will be £541 a-year, with very little expense for attendants. I believe we might safely estimate the probable numbers and corresponding receipts at double what I have calculated."

SANITARY NOTES.

KINGSTOWN.—At a meeting of the commissioners, the mortality in Kingstown during the past month was stated to have been 15 per 1,000 of the inhabitants. Reports were read, showing that arrangements were being made to use gas by meter, to light the band-stand and lamps on the East Pier promenade, and that a quantity of Bray Head stone had been provided for the repair of the roads of the township. A notice was read from the Local Government Board to the effect that £21 would be charged for the auditor's time in auditing the township accounts. The chairman considered this charge excessive, considering that the Dublin Corporation were only charged £120 for the same work. Some matters connected with the sanitary arrangements, finance, street lighting, and repair of roads, were subsequently dealt with, and the board adjourned.

BRAY.—The nuisance inspector was directed to serve notices to the effect that any encroachments on the footways by traders, or the obstruction of the water-tables by waste matter, would be met by legal proceedings. Directions were given that the street watering and the levelling of the footways should be carefully attended to. Some accounts, inclusive of one for £30 for the attendance of a commissioner in London on the Gas Bill, were postponed for consideration at the next meeting.

WICKLOW.—Attention having been called to the present state of the vineyard tank, which supplies the Murrough with water, Mr. J. D. Smith proposed, and it was resolved—"That Mr. J. Nolan be empowered to see that the tank be rectified in the best manner."

QUEENSTOWN.—Early in the preceding week, Dr. Croker King, inspector under the Local Government Board, attended the meeting of the Queenstown Town Commissioners, in pursuance of instructions received from the Board, and produced a draft of an Order in Council relative to the provisions should the disease visit these shores. In pursuance of that order he requested that the Board would choose a place for the mooring of ships arriving in harbour infected with cholera, and should fix a site on shore for the building of an hospital if it should be required. In answer to the first question the Board decided upon making the man-of-war roads, off Whitegate, the quarantine ground, but on the subject of a site for an hospital, numerous objections were raised, and the proposal for taking steps to provide an hospital ship was generally entertained. Finally, it was agreed to leave the question of hospital accommodation to a joint committee of Poor-law Guardians, Harbour Commissioners, and the Queenstown Town Commissioners.

DALKEY.—A communication was submitted from the Kingstown Board requesting co-operation in the consideration of a new sewerage scheme for the districts of Blackrock, Kingstown, and Dalkey. The secretary was directed to reply that a competent engineer had been instructed to prepare plans, &c., for a thorough system, to be constructed with as little delay as possible, under the independent control of this township. The sanitary report was highly satisfactory, as not a single case of infectious disease of any description existed within the boundaries. It was arranged to secure the services of Mr. Doyle, C.E., who would inspect the manner in which the road contract was carried out, with a view to the proper condition of the thoroughfares.

THE ROYAL HISTORICAL AND ARCHÆOLOGICAL ASSOCIATION OF IRELAND.

The quarterly meeting took place at Butler House, Kilkenny, on Wednesday, the 8th inst.,

The Mayor, V.P., in the chair.

The following were elected as members:—the Right Hon. the Countess of Kingston; Charles Desmond McCarthy, Esq.; Thomas Galway, Esq., M.R.I.A.; Nicholas Furlong, Esq., M.D.; Dr. J. Tyndall; Rev. J. Leslie Porter, D.D., LL.D.; and W. J. Gillespie, Esq.

Leonard Dobbin, Esq., was elected to a Fellowship.

The Rev. James Graves expressed regret in mentioning that the effort which had been

made to place the museum and library of the association upon a more satisfactory basis, such as would insure their permanent existence as a local institution even if the association at any time ceased to exist, must be considered as having quite failed. The appeal for support for that object, which had been extensively circulated in the county and city, had elicited scarcely half a dozen responses, so that the project should be taken as "fallen through."

The Mayor was sorry to find that the public spirit here was not at the height which it ought to be, considering how it had been educated by the association.

Mr. Graves said, of course the museum and library would be maintained as hitherto by the association; but it was to be regretted that the means of extension and conservation which a special fund provided by a small annual subscription specially contributed for the purpose by a great many people, and forming in the aggregate a sufficient fund for the purpose, could not be secured.

The Mayor considered that they ought all to feel how deeply interesting and valuable was the collection of antiquities brought together there, and the importance of the library. The public spirit might yet be stirred up to an exertion to carry out an arrangement so advantageous to, and calculated to reflect so much credit on, Kilkenny.

In reply to a question put to him by Mr. Ryan, respecting a local school of art, Mr. Graves said that, on inquiry, he found rooms should be specially provided and set apart for such a school, and the association could not give its rooms exclusively for that purpose, being itself rather limited in point of accommodation. He had, however, suggested to some gentleman in Kilkenny the desirability of obtaining a School of Art, unconnected with this association.

Mr. Ryan said he would be in London very shortly, and would inquire at South Kensington as to what steps ought to be taken, and ascertain what probability there might be of a successful movement in that respect.

PRESENTATIONS.

The Rev. P. Moore, Johnstown, presented to the museum a very fine hatchet-shaped bronze celt, found at Crosspatrick, in the barony of Galmoy.

A number of books were presented to the library, principally by kindred societies, including publications of the Royal Archaeological Association of Copenhagen; the journal of the American Numismatic Society; the Transactions of the Society of Antiquaries of London, and of the London and Middlesex Archaeological Society; the Historical Society of Lancashire and Cheshire, &c.

THE BALLYBOODEN OGHAM.

Mr. Graves laid before the meeting a paper cast made by Mr. R. Langrishe, Sion Villa, of the inscribed portion of the Ballyboden stone. This was one of the two Ogham inscriptions known to have existed in the County of Kilkenny before their association had been formed, since which time several others had been discovered; but the inscription on the stone at Ballyboden had been long concealed in the ground, and perhaps the first copy obtained of it was now before the meeting. It was on the property of Sir James Langrishe, who, at the instance of Mr. R. Langrishe, had lately arranged to have the large block turned over, so that the inscription might be brought to light again; and he (Mr. Graves) had attended, by invitation from Sir James on the occasion. It was a work of considerable difficulty, the stone being 9 ft. long by 5 ft. 9 in., and averaging 18 in. in thickness. Sir James organized a strong party of labourers, and under his personal direction and example, the great stone was turned over, and the inscription made fully apparent. A paper cast, similar to that now before the meeting, had been sent to Samuel Ferguson, Esq., LL.D., so well known for Ogham research, Mr. Graves now read a letter from that gentleman, expressing his gratification at having an oppor-

tunity of investigating the matter of the inscription. He read the inscription—subject to any difference which may arise when he should be enabled to examine the monument—as *Corbuloi Magi Labrida* (Corbid, the son of Labrid), and he observed Labrid was a well-known old name. Mr. Graves went on to remark that they were much indebted to Sir James Langrishe for what he had done in exhuming this inscription, and the arrangements which he was making for the stone being set up in its original position and carefully preserved.

Sir James Langrishe was elected a vice-president of the association.

[PAPERS CONTRIBUTED.]

The following papers were contributed to the meeting:—

By Sir William R. Wilde, M.R.I.A., a further instalment of the interesting Memoir of Beranger, and extracts from that archaeological explorer's diary; the present portion principally relating to Glendalough, in connection with which Sir William kindly promised to present to the association a cast from the "Stone of St. Kevin," sketched by Beranger, and subsequently lost, but which Sir William has since discovered and has in his possession.

By Rev. John F. Shearman, Howth—The third of his papers on the churches founded by St. Patrick in Leinster.

By G.H. Kinahan, Esq., M.R.I.A.—A notice of Begern (formerly an island in Wexford Harbour, containing a very ancient religious establishment), with rubbings of some of the sculptures there existing.

By W. F. Wakeman, Esq.—"On a Chambered Carn at Cavancarragh, County Fermanagh."

Thanks having been voted in the usual form to donors and exhibitors, an adjournment took place till the first Wednesday in November.

THE IRISH CIVIL SERVICE BUILDING SOCIETY.

The ninth annual general meeting of this society was held on Saturday in the hall of the Friends' Institute, Molesworth-street. The chair was taken by

Mr. J. H. OWEN, chairman of the Board of Directors.

The secretary having read the report, and the accounts having been taken as read,

The chairman said the society was in such a position that every year's address by their chairman became a rather tedious monotony of repeated success. The society was still maintaining the same relative advance as its accounts had shown every year from its commencement. The only change of any importance was the one which had arisen from the transfer of a large sum of money on deposit to the share account. They had the use of that money at four per cent., instead of its coming into the general profits at eight per cent. They were aware that last year it became necessary, in order to meet the extension of business, to make an extension of capital, which they did to the extent of about one-fifth of the existing capital. Immediately those who had deposits transferred them to the share account, and it had taken a considerable portion of the year to overtake that transfer and re-establish something like the same ratio between deposit capital and their own share capital. At present the deposit capital had been restored to considerably more than the actual amount it was last year, when it was £26,000. At the date of the present report it was £30,000, and was going on steadily increasing. On that deposit capital there was a margin of profits, which went to pay the expenses and insure the bonus. The security of the deposits was greater than was afforded by concerns which were merely dependent on discounts, for, while a great deal of their money must be lent on personal security, this society employed no money that was not secured in the most solid manner that they could desire. Therefore,

they looked confidently to a gradual and steady increase in the sums they held on deposit, and to the shareholders as the most efficient agents in procuring that increase. It was their interest to become depositors themselves, and to induce other parties who might want a temporary means of deposit to do so. Since the institution of the society, nine years ago, there had been 900 separate loans made, amounting on the whole to about £250,000, and of that number there were about 600 still in force, and they were so carefully investigated that the risk was reduced to absolutely nothing. There was a tendency abroad to look upon building societies with an evil eye, because they were able to collect from investors such large sums—such, for instance, as this society has got, amounting to £150,000; but when they were able to issue 900 loans averaging so small an amount, and on terms so extremely advantageous to borrowers as well as to lenders, it was very undesirable that anything should be allowed to interfere with the prosperous career of such societies. *There was no society so well suited to the condition of Ireland at the present moment.* There was room for more building societies in the country, and the more generally diffused they were, the more prosperous they would become. There was a new item in the accounts, called *railway stock*. In consequence of the creation of some new capital there had been brought into the year's accounts a very large sum of money in the shape of entrance fees, which would be peculiar to the year; there were about 150 shares which the members did not avail themselves of the privilege of taking, and the directors issued them at a premium of £4 a share. That, again, was an amount of profit that did not come into the regular profits of the year. In consequence of these matters there was a very large increase of money at their disposal, and the directors invested it in railway stock. It was available at any time, and was rather more profitable than if it was in the bank. There was only one other matter it was necessary to allude to—namely, the proposed changing of the closing of the accounts from summer to winter. In winter the demand for money was less than in summer. At present it took £6,000 to pay the 3 per cent. bonus and the 5 per cent. interest, and if they could transfer a little more than half that sum to the winter quarter, there was a great balance of convenience in it; and, therefore, they proposed to pay the bonus with the half of the interest in December, when they supposed it would be as acceptable to pay the Christmas bills, as at present to pay the expense of the summer time. The chairman then moved the adoption of the report and statement of accounts.

Mr. Hardinge seconded the motion.

Dr. Gardener considered the expenses disproportionate to those of other societies in the north of Ireland, which had a larger reserve fund.

Dr. Carte observed that the Commission on Building Societies had reported that the transactions of this society were greater than those of all other building societies.

Mr. Harte thought it a questionable policy to hold so large a sum as £30,000 on deposit. He doubted if in a monetary panic it would be easy to get so large a sum.

The chairman stated that the advantage of a reserve fund was where there were transactions of a speculative character, but the risk of fluctuations in their business did not amount to more than one per cent. The security they had for their money was absolutely indefeasible. With regard to the deposits, they required ample notice before paying them, and even if they had to pay the whole £30,000, it was impossible that with £150,000 worth of valuable securities they would not be able to get the money.

Mr. Brogan said that considering they got the 8 per cent. the expenses were moderate.

The motion was put and carried.

The retiring directors—W. Carte, Esq., and G. F. Dunn, Esq., and the auditors, H. M. Barton, and R. F. Young, Esqrs.—were re-elected.

Mr. Paile next proposed the thanks of the meeting to the board for the ability and success with which they managed the affairs of the society, and that the sum of £600 be awarded to them for the past year.

Mr. Armstrong seconded the motion.

Rev. B. Gibson moved as an amendment that the sum be the same as last year, £500.

Mr. Coonan seconded the amendment.

After some discussion, the amendment was withdrawn, the chairman stating that in future the directors would suggest an arrangement that they should be paid a guinea for board meetings, and half a guinea for committee meetings.

The original motion was then put and carried.

Mr. Hardinge was called to the second chair, and a vote of thanks was passed to Mr. Owen for his dignified conduct while presiding.

THE WORKS ON THE RAILWAY TUNNEL UNDER THE MERSEY.

THE important railway engineering works for connecting Liverpool directly with Birkenhead by means of a railway under the Mersey, are now actively in progress, and when the works now going forward are completed, there will be railway communication between Cheshire, Wales, and Liverpool, *viâ* the submarine route across the Mersey, without change of carriage, which may be regarded as an important achievement in railway engineering. This is, indeed, the first instance of a railway being carried under the bed of a wide navigable river on any large scale, and the tunnel now in course of construction may therefore be regarded as the pioneer of railway submarine engineering. When this project was first broached, strong doubts were expressed as to the possibility of its being carried out with safety in consequence of the immense volume of water flowing into and out of the Mersey, and it was believed by many that there would be insuperable engineering difficulties in driving the tunnel at a sufficient depth below the bed of the river, but these doubts have been proved to be groundless. The crown of the tunnel will be at an average depth of 80 ft. of solid rock below the bed of the river, On the Birkenhead side of the river a working shaft 37 ft. in length, and 8 ft. in width, has been sunk to the intended depth of the railway level of the tunnel, which is 95 ft. below high-water mark. The tunnel from the Birkenhead station to the shaft on the margin of the river will contain two lines of rails; but under the river there are to be two single tunnels, with one line of rail in each. The object of this is to promote better means of ventilation; and it has also this further advantage, that it gives a greater space between the crown of the tunnel-arch and the river-bed than would be otherwise secured. Each of the tunnels will be a mile in length from shaft to shaft; but the actual width of the submarine tunnels will be three-quarters of a mile in length, being the breadth of the Mersey at that point where the tunnel will cross under the river from the Cheshire to the Lancashire shore. The tunnels will be 15 ft. high from the railway level to the crown under the river's bed. Although, as has already been stated, the tunnel will pass through very hard sandstone-rock, of which there will be an average depth of 80 ft. between the bed of the river and the crown of the tunnel itself, it will be faced with Staffordshire blue bricks set in Portland cement, in order to prevent the possible percolation of river-water; and whilst the works are in progress pumps will be kept going on both sides of the river. As the tunnel passes entirely through the sandstone-rock the excavating operations under the river will necessarily be heavy, and these are intended to be carried out by the Diamond Boring Machine Company. This apparatus is said to be capable of excavating about 16 yards per week, and it is expected that a heading 9 ft. high and 9 ft. wide, will be driven under the river to the extent of 1,300 yards within

the next twelve months, and that both the sub-river tunnels will be completed and ready for traffic in the summer of 1875. On the Lancashire side at Liverpool, the tunnels by means of the Mersey line under the town, will be connected with the new joint Midland and Great Northern station about to be opened in Liverpool. The engineers under whose superintendence the project is being carried out, are Messrs. C. D. Fox and J. Brunlees. —*Builder*.

HOME AND FOREIGN NOTES.

ATTEMPT TO BRIBE A COUNTY SURVEYOR.—At the King's County Assizes a road contractor named Duffy was sentenced to three months' imprisonment for an attempt to bribe Mr. T. B. French, the County Surveyor, by leaving a £1 note upon his hall table.

AN ILL-PAID CIVIL SERVANT.—In our advertising columns there is an announcement that the services of a gentleman are required for the post of assistant county surveyor. The very liberal salary of eighty pounds is offered, and this to cover all travelling and other expenses!! Perhaps the body of A.C.S.'s will be obliged to threaten a strike!

A grocer asked an artist, "Is sculpture difficult?" The artist replied, "Why, bless you, no. You have only to take a block of marble, a chisel, and knock off all the marble you don't want."

The Orange Hall, York-street, has undergone a thorough renovating, both internally and externally, and sundry alterations have been effected with a view to increased comfort, &c. Mr. John Moore, contractor for building portions; Mr. Stephenson, do., for painting and decorating; Mr. W. Walpole Campbell, Rathmines, had the superintendence of the works.

THE PENNY-A-WEEK COUNTRY DAILY NEWS-PAPER.—This miniature newspaper is a marvel in journalistic literature, and its contents a marvel of condensation. We have heard of a "Farthing Journal," and read one upwards of twenty years ago; but that serial was weekly. Here, however, is a newspaper which twelve joint subscribers each may have six copies for six days for 1d., three copies for three days for ½d., and a day and a half news for ¼d. If things go on much longer in this way, the public will be paid for reading their morning newspapers, and the readers will be amused at the cost of the proprietors who enjoy "the largest circulation in the world."

MR. A. O'CONNOR.—We (*Builder*) are sorry to hear that Mr. Arthur O'Connor, the well-known glass-painter, is, through long mental and bodily illness, in very distressed circumstances. Several gentlemen, to whom the circumstances of Mr. O'Connor's painful position are known, have formed themselves into a committee for the purpose of receiving subscriptions in aid of Mr. O'Connor and his family. Mr. Stanley Lucas, 84 New Bond-street, acts as hon. secretary. [As Mr. O'Connor is probably known to many of our readers, we shall be happy to receive any donations sent to us for him. His case is one truly worthy of commiseration.—ED. I. B.]

THE ART OF SWIMMING.—In this country, where the few persons who escape death from preventable diseases or street accidents are generally drowned there can be no doubt that the art of swimming should form part of everybody's education, and a remarkable instance of the happy result of attention to this point is given by Mr. Tufnell, inspector of workhouse schools, in his report on the metropolitan district for the past year, just printed. It seems that frequent stories have been told to Mr. Tufnell of boys from pauper schools who went to sea losing their lives owing to their inability to swim, he became extremely desirous of encouraging this art, and induced the managers of the Goliath training ship, and other district schools, to build baths of a large size, warmed in winter, where the boys can swim, race, and dive. They very soon became expert at the art, and one day when a brigantine, employed by the Goliath to sail to Sheerness and London, for the purpose of bringing water and provisions to the ship was sunk by collision with a large steamer, there were twenty boys of the Goliath on board who would probably have been drowned had they been educated in the ordinary way. The Goliath boys, however, having been taught to climb and swim, seem rather to have enjoyed the collision than otherwise. Some climb up the steamer's sides the rest quietly swim ashore; there was no sign of terror or want of presence of mind exhibited by these little sailors, and it is satisfactory to add not one was lost.—*Pall Mall Gazette*.

TO CORRESPONDENTS.

THE OLD WATER MAINS.—The old water mains were composed of lengths of elm trees in their rough state, from 8 ft. to 10 ft. long, with a bore a little wider at one end than the other. The end of one length was tapered to allow being driven in a few inches to the succeeding length.

CALF.—This is the common building stone of the County Dublin. It exists in great abundance in several districts. Some descriptions are very good. It is not well fitted for road metalling.

GABRIEL BERANGER.—This noted artist lived at the close of the last century for some time at 67 South Great George's-street. His name explains his descent. Several Irish artists of note, painters and engravers, were his contemporaries in Dublin.

"THE BIG TREE."—It has many old associations, historic and amusing, as well as the old Manor Court building beside it. They may come in for notice in our pages shortly.

Several matters must stand over until next issue. Correspondents should write in time.

"A VISIT TO EPPA'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPA'S COCOA.—GRATEFUL AND COMFORTING.—By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills.—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cocoa, a thin refreshing beverage for evening use.

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Correspondents should send their names and addresses, not necessarily for publication.

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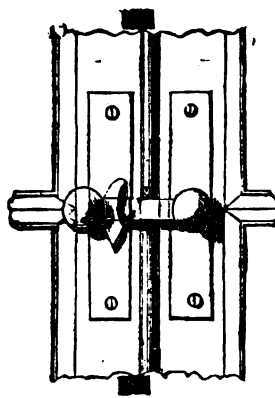
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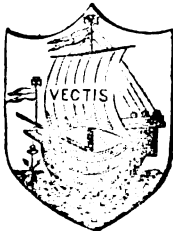
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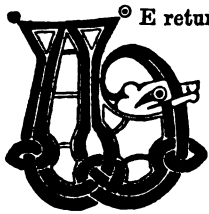
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VOL. XIV.—No. 327.

*Public Works and Public Wants in Ireland.**



A return to the Report of the Board of Public Works, Ireland, for the purpose of noticing one or two matters in connection with landed property improvements and harbour improvements in Dublin and neighbouring counties, as reported by the inspectors appointed to superintend the outlay of loans for the improvement thereof. The majority of these inspectors, superintendents, and engineers' reports are mere outlines of records shewing that certain works have been or are being executed, and of course speaking in favourable terms of the work accomplished. Very little details are given as to construction and materials employed; and, as far as architectural description goes, we do not get much more information in many cases than such-and-such buildings are "nice" or "substantial." Whether some of these reports ought to be taken with a grain of salt, it is for the reader to determine, though at the same time (as we previously remarked) the Report as a whole shews that activity is evidenced in different directions, and considerable good is being effected.

Mr. Robert Manning, C.E., in his report concerning Kingstown, Howth, and other harbours, commences by recording that during the past year the works at Kingstown have been maintained in "good order and condition," and that certain works are being proceeded with, such as the repair of the pitching of the sea slope back of west pier, and the completion of the setting of five stone mooring-posts. The supply of water to the harbour—which has always been bad and deficient in quality, and failed sometime since—is now remedied. The commissioners, we are told, had made arrangements with the Corporation of Dublin to lay down pipes to the harbour, which they did at their own expense, making a charge of 8d. per 100 gallons on the quantity supplied, as indicated by meters. The dredging proceeds satisfactorily at present, in consequence of the repair of the dredger and its machinery.

Concerning Howth Harbour, the sea slopes of which were originally constructed in a very inefficient manner, some works of repair have been executed. In April, 1872, a gale tore up 700 superficial yards of the sea pavement of the east pier, and again another storm in the early part of this year tore up an additional 860 yards of the same pier. The repair of these breaches is being proceeded with during the present year. Four new sheds for curing fish have been erected on the east pier; a quantity of nearly 700 cubic yards has been excavated out of the berths at the land end of the west pier; 1,298 superficial yards of pavement have been set in the face of the east pier; and a

quantity of 2,800 tons of stone has been quarried, of which 1,000 tons, including rubble filling, remain available, according to the engineer's report, for the present year's work. The quay roads and buildings are also reported to have been kept in good order.

In respect to Howth Harbour, we wish to remark that since it ceased to be a packet station it has been very much neglected. In the fishing seasons of bygone years we often witnessed a forest of masts in this small harbour, and more would have availed themselves of it if proper accommodation were to be had at Howth. But, alas for Howth, its own fishermen have for years been the retailers of the "catch" of Manx and Cornish and Scotch boats. Howth might have long since become a first-rate fisheries' station for landing and curing fish, and we hope such an important industry as the fisheries will yet be effectually developed, and that Howth will become more famous for its fish than for pic-nics on its famous hill. At Donaghadee, County Down, some repairs to harbour piers are being executed. At Kilkeel, in the same county, small repairs have also been done.

As we touched upon the question of fisheries, we will quote the report of Mr. Edward H. Alcock, Harbour Master, in relation to Dunmore Harbour. He writes:—Throughout the past year we had from twelve to twenty large cutters trawling in the deep waters of the channel off here; and from fifteen to twenty small craft fishing within the limits of Waterford Harbour. The fisherman has followed his calling with good success, frequently making fine hauls of turbot, brit, sole, and dorys, while plaice and skate were unusually abundant, and occasionally fair takes were had of cod, ling, conger, hake, gurnet, and whiting, so that with the exception of shell fish—lobsters and crabs,—which were very scarce, you will see that there was a fine supply of prime fish to be had here all through the past season, which, but for the extremely boisterous character of the weather, would, I believe, have proved to be one of the best on record. During the latter part of the past summer large shoals of mackerel and pilchards visited the coast, but, owing to want of proper means for capturing these valuable fish, very little, comparatively speaking, were taken."

We consider the above report a very important and interesting one, and it is a matter of much regret that similar information is not furnished from our other fishery piers. It is also a matter for humiliation and regret to think that the fishery resources of this country are so much neglected, and that want of proper means for capturing valuable fish should still exist at Waterford and elsewhere round our coasts. While thousands of our poor are living from hand to mouth in a state of semi-starvation, valuable food is to be had round our coasts in abundance, which could be easily procured and sold at both cheap and remunerative prices to our people.

Mr. Richard I. J. Irwin reports on the working of the Land Improvement Acts in Dublin, and part of the Counties of Kildare, Meath, and Wicklow. He arrives at the conclusion that the legislation for bettering the condition of the farmer continues to be attended with success. He speaks of "nice labourers' cottages," which have been completed for Sir C. C. W. Domville, near Santry. We are not told whether they are built of brick, stone, or concrete. In Kildare, some im-

provements in farmers' dwellings are spoken of, and extensive drainage works on the property of his Grace the Duke of Leinster, reported on last year, for which a loan to the extent of £6,540 was advanced. Labourers' dwellings erected by Mr. Bynd, at Blackhall, and a farmstead erected on the property of the late Col. Henry Verschoyle, concludes the improvements in Kildare. We would like fuller particulars descriptive of these works, in respect to their execution and extent. In Meath, Mr. Irwin reports nine inspections, in which seven were cases of loans granted for building purposes.

An excellent farm-house is mentioned as being completed upon the property of Lord Lansdowne, in the townland of White-leas; and a similar dwelling-house, of equal value and size, in course of erection on the property of Miss Barlow, near Nobber. Some "admirable labourers' dwellings" have been completed by Henry St. George Osborne at Dardistown, and "others equally to be admired" are being built by Lord Athlumney at Clondalee, and by Thomas Fitzherbert, Esq., at Blackcastle, near Navan. Now, we would like to know what constitutes these buildings admirable, and if they are as admirable in plan, and arrangement, and material, as they are in appearance externally; if so, there is a decided improvement.

Extensive farm buildings are also reported to have been completed by George Bomford, Esq., at Drumlargin; and a range of farm offices at Dowth, the property of Lieutenant Colonel Maguire, one end of the latter buildings "being converted into a commodious and suitable dwelling for a steward." Suitable dwellings for stewards are in many places in Ireland a requisite, so it would have been satisfactory to know the plan and capacity of these steward dwellings. Perhaps we seek for too much in the report, which is not issued for the information of the building fraternity in particular, but merely to note progress and performance.

In Wicklow, three cases of building improvements are reported, and four in which loans had been granted for the reclamation of land, planting for shelter, and drainage purposes; two of the former are said to be the largest and finest farmsteads in the county. No dimensions or particulars are afforded by the inspector by which we can ascertain the extent of these farmsteads. One is at Tinode, the property and residence of W. H. F. Cogan, Esq., M.P.; the other is on the property of Francis Synge, Esq., of Glenmore Castle; and the third is in the barony of Arklow, for which a loan was granted of £1,590 to Robert C. Wade, Esq., and the Hon. Catherine T. Wade,—these latter comprise farm-houses and labourers' dwellings.

In respect to the reclamation of land, £600 was granted to George Booth, Esq., of Lara, for clearing land of rocks and subsoiling in the barony of Ballincor; and another small loan was given, to be expended by Viscount Monk in fencing with a stone wall a rocky tract of land at Coolakay, barony of Rathdown. The improvements of Mr. Booth included planting for shelter. In the barony of Ballincor North, an extensive tract of land is also being planted by Charles Frizelle, and some thorough drainage is being carried out by Richard B. Hudson, Esq., of Mount Slaney, in the barony of Upper Talbotstown; the latter cases also include some fencing and planting for shelter.

* "The Forty-first Report from the Board of Public Works, Ireland." Dublin: Printed by Alexander Thom, 1873.

Accepting Mr. Irwin's report, there is certainly some evidence of improvement afforded that the working of the Land Improvement Act in Dublin and the neighbouring counties is producing some benefit, although we are inclined to believe that the nature and extent of the operations, all things considered, are of very small extent.

Land improvement works, farm buildings, and labourers' dwellings, are reported by other inspectors in the Counties Galway, Mayo, Clare, Limerick, Tipperary, King's and Queen's Counties, Cork, Kerry, and Waterford, but on the whole the extent of operations is very small. Works of slob reclamation have taken place on the Lower Shannon to some extent, and a great many acres have been reclaimed and are now under crop. Very extensive works of bog reclamation have been successfully carried out by Mr. Mitchell-Henry, M.P., on his property at Kylemore, in the western part of the County of Galway, and, it is said, with remunerative results. Little advantage, however, seems to have been taken of loans for building labourers' cottages, only eleven cottages having been erected. We fear it will be some considerable time before improved labourers' or farm dwellings will be witnessed to any great extent in the West or even in the other provinces; but until such improvements take place, the morals or health of the people cannot be thoroughly reformed. When we improve the dwellings of our people, we lay the foundation of their intellectual, moral, and social improvement. Give the Irish peasant a home to feel proud of, and employment by which he can supply his common wants, and he will stay at home, strong in his attachment to his native soil.

THE DEVELOPMENT OF OUR TURF INDUSTRY.

THIRD ARTICLE.

It has been shown in our former notices that our peat deposits can be largely developed, and the industry made a most productive one; and also that a greater production is not actually dependent upon mechanical systems. While we agree to a great extent with Mr. Meadows' reasoning, yet we are in favour of the introduction of mechanical systems for the conversion and rapid supply of dense fuel from the upper and more fibrous portion of our bogs.

Heretofore, as already remarked, peat-compressing machines have not proved remunerative in their working. The partial expulsion of water did not remove the whole difficulty, for in the drying of the peat much time was lost and expense naturally incurred. Though 40 per cent. of water was removed in the compression from peat containing perhaps 80 per cent., it was found that peat which was subjected to no mechanical compression, dried in the air to a point not representing more than 20 much sooner.

According to Mr. Meadows, peat unpressed and dry for use might weigh 25 lbs. to the cubic foot, would not have weighed much more in the same condition than perhaps 80 lbs. to the cubic foot if it had been subjected to pressure. The compression of peat by mechanical systems while in a wet state not having proved successful, the method was proposed of drying it first, and then subjecting it to compression. This last system has been termed "Exeter's," from its inventor or introducer. It has been first tried in

Germany, and is at present carried on to some extent in different places in Bavaria. At one place it is carried on by the State for the use of the government railways, and in another it is in the hands of private owners, who also produced the compressed turf for the same purposes.

Under this method the bog to be worked is first drained, and the bed from which the peat is raised is made level. A thin layer of peat is worked off by ordinary labour; where this system is in operation at Haspelmoor and at Kolbermoor, steam power is used. By exposure to the air for some time, it will be seen that the level beds which yield this thin layer have lost a portion of their moisture. When this thin layer is made up into small heaps, of course the fine mould becomes more dry. After a short exposure to the sun and air, the fine loose peat obtained is removed to storing sheds, where it becomes a stock of raw material for future manufacture. During the favourable portions of the year the production of this raw material is attended to at the bogs. The after-manufacture is carried on in buildings in the vicinity, where the fine peat mould is more fully dried by artificial means, and in the process it falls into horizontal tubes, wherein it is compressed by rams and plungers worked by powerful machinery. The fine peat soon becomes solidified, and dense turf fuel is the result. The cost of this form of compressed turf was estimated in 1872 at 12s. per ton, but large original outlays upon fixed erections and machinery, and attendant liabilities in connection, must be considered. The advantage claimed for this method is its capability of being continuously carried on, supposing the production of the raw material has been properly attended to.

We now come to "Exeter's" system, as it has been tried in this country. Works were erected at Derrylea, near Monasterevan; but, as Mr. Meadows remarks, the cost of manufacture coupled with the average cheapness of coal decided against their commercial success. It was not possible, we are told, to sell the compressed turf of Derrylea in Dublin at 12s., including the cost of transport from the works, and hope for profit from the undertaking. The loose air-dried peat moulded by the method we are describing is subjected to a further drying by artificial heat ere it reaches the compressing portion of the mechanism. In the Bavarian works the exhaust steam from the engine is employed for this purpose, and after its exit from the cylinder it is made to pass through a series of hollow iron floors, over which in an enclosed chamber the peat mould is carried by screws or spirals. When it reaches the final stage of actual compression, it still retains a warm moisture—a very important element in the process, as the fibrous portions are softened, and in a more fit state for being worked into a compact mass by the action of the rams of the machine. On the authority of Mr. Meadows, compressed peat made by this system weighs about 70 lbs. to the cubic foot, and is ready for use immediately after it is compressed. At Kolbermoor it issues in an almost continuous length for several feet along a wooden shoot upon which it travels, and it breaks off in portions by its own weight when it extends a short distance from the termination of the shoot, where it is received in baskets and transferred to railway wagons which are at the works.

As to the heating power of this compressed

peat for locomotive uses, as compared with ordinary produced turf of the same quality, but not compressed, and comparing it with four varieties of German coal, we have a statement based on the information supplied by the managing director of the Bavarian State Railways. By adapting this data to our standards of weight, we have a very fair result as to the comparative heating powers of turf and coal weight for weight:—

5,000 lbs. of ordinary cut turf =	5,000 lbs. of compressed turf.
5,000 lbs. of compressed turf =	2,560 lbs. of coal from the Ruhr.
" " " "	3,100 lbs. of coal from Bohemia.
" " " "	3,230 lbs. of coal from Zwickau.
" " " "	3,945 lbs. of coal from Miesbach.

Taking the mean of the four varieties of coal, the result in tons, for locomotive purposes would be that one ton of turf, whether compressed or not, has been found equal to something more than six-tenths of a ton of average coal. Mr. Meadows points out, in relation to this, that the turf here referred to must be taken on the whole as of a light fibrous nature, such as would be obtained from the upper portion of an average Irish red bog within a few feet of the surface. One of the advantages of well compressed peat is, that the heat is contained in a smaller bulk, and is more concentrated.

One of the earliest attempts for making dense turf by mechanical appliances was that of Challeton, in France. These works were reported upon by Dr. Dullo at some length. The raw peat, after being brought to the works by tramway or canal, is passed into tearing apparatuses; and by an arrangement of rollers or cylinders of about 4 ft. long and 6 in. in diameter, fitted with knives or cutters, the material is manipulated. Water is added to the peat in these apparatuses, and the thin pulp is raised to an upper floor by means of a chain pump, where it runs over fine sieves to free it from coarse fibres. It is afterwards conveyed into drying basins. These basins or pits are 40 ft. square by 1 or 2 ft. deep, and at the bottoms they are covered with rushes or reeds, forming a porous bed for allowing the surplus water to drain away from the pulp. The pulp soon becomes sufficiently firm to admit its being cut into pieces. The drying-shed process succeeds, and eventually comes the artificially-heated chambers. Considerable density is obtained by this method, and the dense peat produced burns with little or no flame. The system, as a whole, labours under a defect, being entirely dependent upon the weather, and a large production cannot be calculated upon.

Challeton's system has been improved upon; and Ernest Bosc, in writing in support of it in 1870, states the cost of production as being about 9s. per ton. The making of dense turf was taken up by Weber, at Staltach, in Bavaria, by means of simple mechanical tearing and mixing of raw peat. Weber's system consisted of a vertical vessel of the pug-mill kind, in which an iron shaft revolved with cutting blades in the inside of the vessel, and at the sides other blades were attached, between which those on the shaft passed as it revolved on its axis. The peat being raised to the mouth of this tearing machine by an elevator, by the action of the knives it was cut or torn, then issuing from an orifice at the bottom in a mixed state as a mass of pulp. Weber's system was also subject to improvements, the most important being those made by Schlickeysen, a manu-

facturer of brick-making machines in Berlin. The machine of the latter is like an ordinary clay pug-mill. An iron shaft revolves with strong blades attached for tearing and mixing the peat. They operate with a downward force upon the peat all the time they are engaged in the tearing action. The mass is consequently driven downwards and outwards laterally through a mouthpiece; at the bottom, this mouthpiece has three apertures about three and a-half inches square through which the peat is forced. As it issues it is cut off in pieces by hand about 10 in. long; these pieces are placed on boards about 3 ft. long by 1 ft. wide, and on these boards they are carried by barrows to be laid out for drying, the boards being brought back again to be re-filled. An inclined piece of timber or plank is sometimes used at the surface of the bog, reaching the staging at the mouth of the machine, up which the barrows are wheeled; in other cases an elevator is used. It is said that peat treated in the foregoing manner dries freely in the open air, is but little affected by rain, and is generally found to be sufficiently dry for heaping finally together in from four to six weeks. The sizes of the pieces of peat cut off at the Schlickeysen turf press are about 10 in. long by 8½ in. square; in their air-dried condition they vary from one-fourth to one-sixth of the original bulk, the difference in the shrinkage being due to the different varieties of peat. A modification of above arrangements of Schlickeysen has been made at works carried on by Prince Schwarzenberg, near Gratz, in Bohemia. The results to be obtained by this method are pretty nearly the same. Upon the same principles, but with some other modification in the mechanical appliances, are the works for making dense turf carried on in the province of Drenthe, in the Netherlands, by Mr. Rahder. The total production of dense turf at Mr. Rahder's works for the turf-making season of 1872 was about 5,500 tons, which represents the working capacity of five machines and five portable engines. In addition to making dense turf, the latter manufacturer carries on extensively the cutting of ordinary turf for sale, the combined industries giving employment to about three hundred persons during the turf-making season.

In giving a description of his visit to Mr. Rahder's works, Mr. Meadows says:—"The writer had an opportunity of vividly realizing all round him in this portion of the province of Drenthe the description already given of the changed aspect of the country from its original condition of moor and bog into luxuriant fields, interspersed with timber, orchards, and gardens, and crowned with houses of taste, and not unfrequently elegance. But for all these things the people toil assiduously. The humblest labourer is here honorable, and all who toil are cleanly and well clad, and apparently content. Industry has evidently marked out these working people for her own." Need we repeat that the same pictures might be multiplied over and over again in many counties of Ireland, if our turf industry was properly developed. The machine introduced into England by Messrs. Clayton and Son and Howlett, has been alluded to in a former paper; according to Mr. Meadows, it does not possess any advantage over the mechanical systems we have been describing. The mechanism is said to be too elaborate, and simple not complex machines are more desirable for peat work. The special object said to be aimed at in

Clayton's machine is the reduction of the peat to a finer state of pulp than what is effected by foregoing systems of the pug-mill class. Such a very minute division of peat is, in the opinion of Mr. Meadows and others who have paid attention to the subject, undesirable, as the pulping process, if carried too far, is not at all advantageous. In the United States there are systems somewhat similar to those we have described. Leavett's machine is adapted to be driven by an engine from six to ten horse power for the two sizes of machines of the capacity of fifty and one hundred tons each, of crude peat per day of ten hours. The capacity under average circumstances represents from eight to fourteen tons daily of ordinary air-dried turf. The cost of production, as stated by Mr. Leavett in 1867, was two dollars per ton.

In Canada, Hodges' system has afforded, under special conditions, useful results. The cost of production appears to be less than two dollars per ton, and the capability of production of his floating works may be equal to about 8,000 tons of dry dense turf for the season. Hodges' system is worked by means of a barge or scow, of about 80 feet long by 16 feet beam, and 6 feet deep. It is constructed at one end of the bog, and launched into a dock made to receive it. The barge contains the engine and all the requisite machinery for working the manufacture. Mr. Box's system is the same as Challeton's, but it is at present undergoing some improvement to adapt it for better working. Whether this last adaptation or combination of other methods will render the machine the best, it remains to be seen. Commercial success must be the end of all methods, if they are to succeed. Without, however, waiting for the advent of new and better machines, our countrymen have a wide field for the display of their energy, in the production of ordinary turf for domestic and other wants. We shall sum up the question in another paper.

NOTES FROM NEWRY.

SINCLAIR AND SON'S NEW MILLS.

THIS handsome edifice has been carried to its intended elevation, and is a work of which Newry may well feel proud. The building is situated at the corner of Canal-quay and New-street, on the site of the old mill, which was destroyed by fire in December last. It has a frontage of 79 ft. towards Canal-quay and 62 ft. towards New-street. Operations were commenced in January of this year. The foundations are laid on concrete beds of large dimensions. The height of the building from ground to eave is 68 ft. 6 in., and from ground to ridge of roof, 81 ft. The walls next Canal-quay and New-street are constructed of brickwork, and faced with Belfast bricks, laid in old English bond. All the other walls are of rubble masonry. The style adopted by the architect is Venetian, the details, however, being of Early English Gothic character. The structure stands upon a massive patent axed chamfered plinth, 2 ft. in height. The windows and doorways have semicircular arched heads; the reveals are deeply recessed, and formed of moulded bricks, which are continued around heads of windows, and a continuous freestone hood-mould is formed over tops of ground storey windows and doorways. The heights of the various storeys are marked by bands of coloured bricks and richly-moulded string-courses, continued around both elevations, and the whole is ornamented by a very boldly corbelled and arched freestone cornice, the effect of which is increased by the dormer gable windows being carried upon this corbelled cornice beyond the faces of walls, the

dressings of the gables being also of freestone similar in character to the other parts of the building. The corner of the building at the junction of Canal-quay and New-street is semicircular in shape; a lantern or cupola will be constructed in the roof at this rounded angle, from which magnificent views of the surrounding scenery will be obtained. Some idea may be formed of the imposing appearance of the building when we mention that it is six storeys and a semi-dormer storey in height, and shows sixty-two windows and two doors in Canal-quay elevation, and forty-five windows and three doors in New-street elevation. Every possible precaution has been taken by the architect to ensure the stability and security of the building. The footings to walls are formed of English firebricks, laid and jointed in cement, and ties of strong hoop-iron have been inserted between each course of brickwork, and also at certain distances throughout the entire height of brick walls ties of hoop-iron bond have been incorporated with the brickwork, and by means of the internal timbers the walls are securely braced together by traceried wall-washers of novel design. Internally the mill is divided into three fireproof compartments by thick walls of masonry which continue up throughout the entire height of the edifice, the apartments being divided by double iron doors. The floors being supported on strong cast-iron columns, having boxed heads, through which pass beams carrying the floor joists, the external walls will be relieved of any undue weight. The granite blocks which support the columns rest on beds of concrete. The stringcourses throughout the building are of Dungannon blue freestone, and the plinths and window-sills, the latter of which are deeply splayed or weathered, are of Newry granite. The beams and flooring consist of best red pine and Memel timber. Two carved bosses are placed, one at either side of the entrance-door in New-street; that on the left side contains the monogram of the firm in the centre, "S. S.," and the name "Clanrye Mills;" that on the right side has the monogram, with the words "Erected 1873"—the whole being tastefully carved in stone.

The buildings were erected from the designs of Mr. William Jas. Watson, architect, and the whole work has been carried out under his professional care by Mr. John O'Hare, builder, Mary-street. Mr. W. Lyons was the clerk of works.

The entire machinery is being supplied by the Newry Foundry Company, and no expense is being spared to make the mill one of the finest in the trade. The engine is on the company's improved three-cylinder principle, which has gained a wide reputation, owing to the small consumption of fuel which it entails. The mill is to be fitted with six sets of stone gear, fitted on main shaft, and six sets of double running stone gear on Cullen's patent, the whole being equal to eighteen pairs of the ordinary millstones. Everything is arranged for manufacturing flour with the smallest amount of manual labour. All the various operations, from the taking of the wheat from the store to packing the flour in sacks, will be performed by machinery. The wheat-cleaning and preparing machinery is separated from the main building by a fire-proof partition, through which runs fireproof spouting for conveying the grain by means of elevators to the hoppers. The machinery is being fitted up under the superintendence of Mr. W. Rennie, manager of the Newry Foundry, and is being constructed from drawings executed by Mr. Otto Wirz, formerly draughtsman in that establishment.

The total cost of the building will amount to about £10,000.

THE DISPUTE IN THE BUILDING TRADE.—Since our last issue the dispute between the masters and the men in London has been adjusted by a concession on the part of the former, by which ninepence per hour will be paid in future, and the leaving-off hour on Saturdays to be, as previously, at twelve o'clock. These arrangements are to take effect from and after the first week in this month.

THE DRAINAGE DEAD-LOCK.

A NEMESIS has certainly for some years been pursuing the bantlings of the Dublin Corporation, and the deformed offspring, as well as the putative parents are coming to sore grief. Unholy alliances generally work shame and disgrace when the hour of parturition comes, and no act of suffocation or smothering can destroy the monstrous abortion. History is ever repeating itself in public as in domestic matters, and we have only to watch the course of events to assure ourselves of the fact. The Main Drainage scheme has miserably collapsed after several thousand pounds being already expended in paving the way for this measure, by getting rid of opposition in various directions, some of the said opposition having its inception in the minds of the advocates of the measure. English and Irish special and consulting engineers and lawyers have milked the project to death, and a hungry staff of expectant assistants is engaged in a mendicant howl—"We've got no work to do." It was a modest calculation that £300,000, which has now swelled into nearly a million, as the estimated sum for executing the desired drainage works of the city. Nobody is of course to blame. Engineers had to be paid, lawyers had to be paid, a do-nothing staff had to be paid, parliamentary expenses had to be paid, and a little bill of deputations, visitings, hotel and car-hire had to be paid; and there were several "sundries" had to be paid, not to speak of rise of materials and the increased cost of living in the meantime. Under all these circumstances, it was very wrong of the public to suppose that the Main Drainage works could be done for the original sum, remembering, at the same time, that the original scheme was enlarged, and that the greater the amount of work the greater the cost.

It is positively sickening to reflect upon all the surroundings of the Dublin Main Drainage scheme, which has certainly in every sense been a *drainage* scheme to this city, executed or not. Viewing the shameful collapse of this project, we may ask what is to be done in the meantime? Is the Liffey to remain the foul and abominable open sewer that it has been for several years? Are fever and cholera to visit our city and swoop down hundreds of our people? Are the Main Drainage Committee and the engineers of the Corporation to keep on reporting and dawdling to the end of the chapter, until some other sinister public work scheme is hit upon to lift them out of the mire into which the whole of them have fallen?

The Local Government Board has certain powers, and the Irish Executive has certain powers, and the ratepayers of Dublin have a certain voice, and it seems strange to us if a combination of these three powers cannot make a move sufficient to startle the most somnolent Corporation in existence. Before pushing matters to extremes, the Corporation had better wake itself up, if it has any honesty and energy left, and set about doing something in affording even a temporary remedy for the ills we labour under in this city. All sorts of suggestions are cropping up: some sensible, and others most ridiculous. There is a complete dead-lock as regards the Corporation scheme, but there exists no reason, because that measure cannot be proceeded with at present, that some temporary remedy, designed as an instalment of a larger measure, should not be tried. The people must not be allowed to wait longer in a state of suspense, trusting to chance to save them from the impending danger. Some years ago we advocated, under other conditions, the system of intercepting sewers on each side of the river, but this in itself would be only a partial remedy, as their outfalls would necessitate a great deal of auxiliary labour to make them thoroughly serviceable to the city. Intercepting sewers, however, would accomplish much good and save the river from constant and continuous pollution. We have

no faith in the system of raising dams in the river to smother the smell, while the cause would continue. We desire to see the Liffey thoroughly emptied of its filth and ooze, and the sewers that pass into it intercepted.

We do not see any difficulty in the way of keeping the river cleansed between Carlisle Bridge and Barrack Bridge, pending other works. A proper staff of men for a few days, with the aid of cleansing and dredging appliances, would soon rid the city extent of the river of its foul ooze. Barge and dredging operations could even be performed between the bridges when the tide was up, and with the returning tide the filled barges might carry off their freight. The occasional operations that have been performed for some years by a few scavengers of the Corporation in removing the slime from the sides of the embankment have been next to useless. The sweeping of a portion of the loose mud into the centre of the river when the tide was at its lowest—thinking that the sluggish current would carry the central deposit away,—was childish and ridiculous in the extreme. Tides are not kept back by pitchforks, neither are smells got rid of by sweeping filth from the side of a passage to the centre. The incoming tide driving up the Liffey always carried the central deposit of filth further up the river, scattering it at either side, so the labour of the Corporate scavengers was generally labour in vain. If foul effluvia is to be got rid of, the filth which causes it must be bodily removed.

For upwards of a quarter of a century the Reformed Corporation has been tinkering at the Liffey, and every year it has grown worse and worse, and now the bantling that they have been so long hatching and nursing has been by their own guilty neglect swollen to such a degree of positive rottenness in all its parts as to end in a hideous collapse.

MEMORIALS OF
OLD ESSEX BRIDGE.

(Being Extracts, with Notes, from the Diary of George Semple, Architect.)

SEMPLE, after discoursing on the different methods of centreing for large stone arches, and having given a few very good diagrams in illustration of the methods he thinks best according to circumstances, proceeds with his

DIARY.

"December 14th.—There came down a terrible flood, but we expected it, from the heavy rain we had, and prepared for it. The first high water afterwards rose to 12 feet 6 inches, and every high water afterwards rose to 12 or 13 feet for six successive days, and even at low water the floods kept up to 8 or 9 feet, during all which time, our sluices being open, we suffered little or no damage, except loss of time, and the disturbing our stage utensils, &c.; for all the water being at the same level within and without, it was perfectly still and quiet within the dam.

"From the 4th of December, 1753, to the 23rd of February, 1754, the floods continued extremely high, and often to 13 feet at high water, which greatly retarded our work, but otherwise did not do us any considerable damage. However, we were now enabled to put the rough masons to get ready the foundation of the second northerly pier, which was executed like the former; and in four nights and days we had it ready for the stonecutters—that is, on the 27th the stonecutters laid the first cut stone of the second northerly pier.

"March 19th.—We began to drive the first of the piles of the coffer-dam for the second principal operation on the south side (plan given).

"29th.—Second northerly pier springing high.

"30th.—The stonecutters began to lay the first course of the second northerly arch.

"April 8th.—The coal-gabbarads were stopped for the first time, and missed three

tides, when we closed a way for them under the northerly arch.

"22nd.—They began to pull down the Excise Office; by the delays given to us on that account, we lost eight days of the finest weather we had for a year past.

"25th.—Part of the Custom House quay wall fell [old Custom House], by which we discovered another old quay wall 6 feet within that.

"May 23rd.—Both the north arches open and free for the coal-gabbarads.

"25th.—There came down a sudden rapid flood from the mountains, which washed away a great deal of the clay which we were putting in the coffer-dam.

"June 5th.—From the 25th of last month to this day we had constant land-floods, the ebbs seldom under 3½ or 4 feet. These floods destroyed a vast deal of the clay, but with great difficulty we got the current turned entirely into the north channel to its full depth.

"14 and 15th.—This and former days we had great labour in taking up the ridge of loose stones, which lay in a direct line quite across the river below the bridge, as before mentioned; but dear-bought experience had taught us to spare neither time nor cost to get these dreadful pests removed from under the dike.

"July 27th.—These six days we had exceeding rapid mountain floods; high water generally about 11 feet.

"August 4th.—We finished the rough stone foundation of the south pier of the middle arch.

"5th.—The stonecutters began to set the same pier.

"12th.—In dredging for the south-east corner of the dam we met with very large cakes of petrified sand that the floods had carried down, which they were forced to break by driving well-shod piles into them.

"28th.—We stopped all the pumps, as we had no further occasion for them.

"From the 20th to the 28th of September we were obliged to stop the carriages from going along Essex-quay, on account of our sinking for the south abutment, in doing which we raised part of the foundation of Newman's Tower, which had been very judiciously laid on the solid rock; and we were also obliged to quarry in some places two or three feet deep of the rock, to bring it to a proper level, and omitted two courses of cut stone of that abutment, as the third of the projecting courses was laid upon the solid rock.

"October 7th.—The abutment finished, springing high, and the same day we began to lay the foundation of the south quay wall."

[The above skeleton notes which our architect's diary furnishes are more valuable than they would seem at first sight. They shew that the Liffey, even in the summer as well as the winter months, was formerly more subject to mountain floods or freshets than at present. They prove the existence of a rock or strata of stone extending obliquely across the river. They corroborate the existence of an older quay wall, within the one then and now existing. They fix the locale of the old Excise and Custom House, concerning which, however, there is sufficient other evidence. They point out the site of Newman's Tower as marked, we believe, on Speed's map of the city in 1610, and later maps; and they also remind us of the old coal traffic carried on through the means of gabbarads that acted as lighters to the larger coal and other vessels that could not sail so far up the river as Essex-quay, for want of sufficient depth of water in the harbour. Each side of Essex Bridge on the south side were formerly landing-stages and wharves for all sorts of merchandise, and shipping stores extended along Essex, Wood, and Merchant quays, and backwards on the "Blind-quay" on a line with St. Michael's and St. John's Roman Catholic chapel (Smock-alley, formerly). A plate is given in Malton's Views of Dublin, published in the last decade of the last century, showing a "View from Capel-street looking over Essex Bridge." To the

right of Parliament-street is seen the old "Coal-quay," and the quay to the left, that of the old Custom House. That old building appears with its high roof and tall chimneys. The central wing has a pediment, above which rises a small cupola or louvre, and a range of pedimented windows on either side is shewn in the roof. Vessels are seen close to the bridge, as is now to be observed at Carlisle Bridge; the Royal Exchange appears in the distance. Two recesses or alcoves are shewn on either side of the bridge, at a distance of three bays of ballusters from each end. These recesses were intended for resting-places, and were probably used for a time by the old watchmen of the city. The piers wherein they were formed overtop the balustrade with a coved and ornamental finish. When they were removed, or the alteration took place, we are not at present able to tell; they have not, however, been seen in the memory of the present writer. The first and second houses commencing Capel-street on either side are also well delineated in Malton's view. The first house on the right as you look up Capel-street has an oval sign-board between the drawing-room windows, which are semicircular, on which is painted "The Old State Lottery Office," with a harp underneath. The second house has a similar shaped sign between the windows, on which is emblazoned "The Military State Lottery Office," by appointment. The first house in the street on the opposite side is a boot and shoe warehouse, and between the windows is a sign of a leviathan boot. A number of oil lamps overhang the bridge and the shop windows. The Castle Guard are on their way to the Castle, and are crossing the bridge; and bellmen, beggars, basket-women, barrowmen, belles and beaux, and public men and public characters, riding, walking, idling, ogling, with their walking-sticks, whips, and canine pets, are scattered about. The view is a good representation of old Dublin life in the last century, and its strange ways and costumes, which might be expected to be seen by the artist on and about the once fashionable Essex Bridge.

Before proceeding with his diary, Semple treats his reader to a chapter on the proper method of building quay walls. He confesses he was taught to discover the true method by an eminent and worthy gentleman—by name, Major Marcell. The major's rule was, "that the outside of a quay wall ought to batter one-sixth part of the height of it." Next, our architect tells us how to construct a battering plumb rule, and then proceeds with his diary.]

THE COMPLETION OF THE BRIDGE.—THE DIARY.

"November 1st.—We began to put up the centres for the two southerly arches, and prepared to do the same for the centre arch.

"January 10th, 1755.—The haunches of the two northerly arches being completed, we made a safe and commodious footway to the dike, which we railed in, and which proved a great advantage both to the public and our work."

"March 5th.—The second south arch was finished, and we began to build the cross walls from the crowns of the arches, in order to make the carriage-way.

"April 1st.—The middle arch being almost closed, we employed men and carts to bring in rubbish to raise the pavements about the north end of the bridge.

"8rd.—The pavements began to pave.

"8th.—The last and centre arch being closed, I immediately boarded a carriage way of 20 ft. over the middle of the bridge, in order that the impatient public [always impatient] might have the benefit thereof as soon as possible; and the same day, having got one side of it paved, I invited the Right Hon. the Lord Mayor, being Alderman Percival Hunt, and the two sheriffs to be the first three, as accordingly they were, that drove over the bridge.

"10th.—The bridge was left open for the use of the public in general, which made two

years and eighty days since the day on which they were deprived of the use of the old bridge, which was January 19th, 1753."

[And now this bridge is being demolished, on which the assiduous and painstaking Semple exhausted so much care and ability, considering the times. Semple's bridge, though well built, was raised too high above the line of quays on either side. It was a common practice in his day to span rivers with a bold sweep, the bridge builder caring little for what men and horses might suffer. There was then no society thought of for the "Prevention of Cruelty to Animals," and architects and engineers were sparse. The old builders, however, built well, and for posterity. Semple's structure, if let stand, was capable of remaining intact for centuries to come. His foundations are to be utilised in the new bridge; we are glad of this, for it would be a pity to disturb work so well and securely laid. George Semple's name will, after all, live in the memorials of the new as well as the old Essex Bridge.

We propose to give some other extracts and notes in our next, concerning our architect in connection with Essex and other bridges, and "Building in Water."

VENTILATION OF SEWERS AND DRAINS.

A new process is being submitted to the public for ventilating sewers and drains. This improvement is patented by the inventor, Mr. John Walter Smith, of Oxon, in Chester. The invention consists "in making brick man-holes or air chambers in the street. In the centre of each man-hole is a tube reaching from the top of the sewer to the level of the street; at the side of this tube, at the bottom of the air-chamber, small pipes project into the sewer for the purpose of furnishing pure air from the air-chamber to supply the sewer with air to and create a draught in the tube. The air-tubes are connected with the sewers, and are fitted with heads partly cylindrical and partly conical, which revolve from the action of the wind, presenting an open chamber to receive the wind, which then passes down the pipes into the sewer and air tubes, also fitted with stationary heads, partially cylindrical and partially conical, which are divided vertically into four compartments, which present chambers for the reception of the wind blowing from any point of the compass, which then passes down the tubes into the sewer to replace the foul gas drawn through the ventilator. Also a ventilating trap, to be placed outside the walls of the houses in the drains, the said trap having an inlet pipe to receive the house drains, and an outlet pipe to discharge into the sewer, with an open grating between the inlet and the outlet pipe and trap to allow the gas to escape, which might be forced past the trap, and then cut off direct communication between the sewer and the dwelling house." To fully understand the above, the diagrams that accompany Mr. Smith's specification would be necessary; however, the principle will be understood by our readers; and the carrying out of such a method of ventilation appears simple and feasible. Application has been made to the Metropolitan Board of Works by Mr. R. L. Hicks, requesting the Board to grant him an opportunity of submitting to them the new process as patented by Mr. Smith. Permission has been granted by the Board (by way of experiment) to place one or two of the said ventilators in the Board's sewers on the following conditions:—

"That the work of fixing such ventilator or ventilators be carried out entirely at the expense of the applicant; that he do remove the same at his own expense when called upon to do so by the Board, restoring the sewers, ground, and roadway to the same condition as they were in previously to the commencement of the experimental works; and that the whole of the works be executed to the satisfaction of the Board's Engineer; and further recommending that, in the event of the Board granting such permission, the matter be referred

back to the committee, with authority to select the point or points in the sewers where the proposed ventilators may be fixed.—Agreed to."

A similar trial might be made in Dublin without awaiting the result of the London one. As it would cost the Corporation no expense, and might be the means of ridding us of some of our surplus effluvia, we would like seeing the experiment tried. We are forgetting, however, that the Corporation don't mind the paying for "making experiments" on a grand scale betimes, knowing that it can be booked to the tenants on the City Estate.

BOOKS RECEIVED.

Elementary Principles of Carpentry, chiefly composed from the Standard Work of Thomas Tredgold, C.E., with Additions, Alterations, and Corrections from the Works of the most recent Authorities; and a Treatise on Joinery, containing a Detailed Account of the Various Operations of the Joiner. Edited by E. Wyndham Tarn, M.A., Architect. London: Lockwood and Co., Stationers' Hall-court.

THE name of Wyndham Tarn is well known for several years in connection with the constructive science and principles of the building art. Independent of his published works on "The Science of Building," "Designing, Measuring, and Valuing," as illustrated in "The Student's Guide," and "Practical Geometry for the Architect, Engineer, and Mechanic," Mr. Tarn is the author of several able papers on kindred subjects in our professional contemporaries. The present work, as far as it relates to carpentry, is somewhat of an epitome of Tredgold's large work on the same subject. The chief value of the present volume is its admirable condensation of the elementary principles of the carpenter's art, illustrated by working details and descriptions of modes, forms, and materials used, made more valuable still by the addition of an elementary Treatise on Joinery. The chapters on carpentry, the properties, preservation, and structure of timber, the seasoning of timber, the decay and preservation of timber, the structure and classification of woods; strains on beams and frames, and resistance of timber; the framing of timber in relation to floors, roofs, domes, bridges, partitions, framed houses, centreings, shorings, breastsummers, cofferdams, &c. The Treatise on Joinery supplies a want, for it is what may be called a most useful glossary of the general technical terms used in the workshop and building, in performing the different operations necessary to the preparation and finishing of various pieces of workmanship, as it relates to doors, framing, windows, mouldings, floors, skirtings, staircases, handrails, columns, and the furniture and finishings requisite to their completion. There are numerous illustrations in the present work, which render it nearly complete as a volume in itself; but frequent allusions are made to an Atlas of Plates, to be had separately, containing thirty-five engravings affording further and fuller examples of constructive carpentry and joinery. A thoughtful, intelligent, and interesting introduction commences the work, and a list of references is given in alphabetical form to nearly a hundred other volumes or treatises on kindred subjects, the majority of which are unknown even to some of our best and most educated building workmen. Among the list are many American and Continental authors, and we unexpectedly came upon the name of Semple, our Dublin architect, a reference being made to his "Building in Water," a work which is at present under notice in our columns. The best we can say of the volume of Mr. Tarn is, that it is an excellent one, and one as well fitted for a class-book in schools where technical instruction is proposed to be taught in view of the future of our workmen, as for the workshop and the general bookshelf of all practical and would-be useful persons.

OBSTRUCTIONS IN OUR CITY THOROUGHFARES.

We have previously and on more than one occasion directed public and judicial attention to the alarming growth of street and footway obstructions, north and south of the Liffey. The police are not either instructed in their duties, or are careless in performing them, or magisterial wisdom is grievously at fault. A large number of our traders and brokers have already converted half or more of the footways in front of their shops into outside booths for the display of their goods, which their awnings cover, converting such displays, in their opinion, into the "right of way"; but the obstruction of the public way. We are concerned to know why brokers, pork butchers, and provision dealers, and vendors of all sorts of dry or perishable goods, should be permitted to continue in violation of the law as laid down in the "Town's Improvement Act," and "Nuisance Removal Acts." A stop must at once be put to these glaring and injurious obstructions; and in carrying out the law, the public should be given that even-handed justice as evidenced in the due administration of that law. The weak and helpless, though at fault, must not be pounced upon and persecuted, while a set of gigantic monopolists are allowed to push trade in every direction on the flags and pavement, laughing in their sleeves at the decisions of our magistrates, and winking with both eyes at sub-constable Short-sight, who stumbles at a gnat while swallowing a camel. We read in the daily press on a certain morning last month,— "Mary Rooney, a young girl carrying a basket of *very large fresh herrings*, was brought into court by a policeman, who said he found her obstructing the thoroughfare in Mary's-abbey." The worthy magistrate imposed a fine of 10s. We hope before the rising of the court that his worship's heart relented, and that the fine was remitted, or that, with a goodness of heart not impossible to police magistrates, he paid the fine *sub rosa*. Now we consider the case of Mary Rooney and the fine inflicted upon her a very harsh one, and altogether out of proportion with her offence, unless indeed she has been an old offender, and possessed a very bad tongue. It is probable that there was not half-a-crown's worth of "large fresh herrings" in poor Mary's basket, and we would like to be informed by the police-constable who took her into custody, whether it was the large herrings, or the small basket that contained them, caused the obstruction, or was Mary more than double the size of ordinary fishwives?

Fresh herrings are palatable food, and we wish there was a greater supply of them throughout the season. Fresh herrings have a wholesome smell, and they have never been out of place in Pill-lane or Mary's-abbey during the present century. It is otherwise with pickled pork, pigs' cheeks, and corned beef, great quantities of which are exposed for sale on our footpaths, after being salted down to preserve them from putrefaction. The barrels and boards containing these classes of goods are betimes pushed out on the pavement; and while in the case of poor Mary Rooney, who is persecuted for being an obstruction, the shop and flag keeper is accounted "a pushing man of business."

We want the same law for the poor as for the rich, and in either case we do not desire to see it unduly stretched. If an improvement does not take place soon in the matter of our public obstructions, it will become necessary on the part of a few of our citizens

to bring the question before one of our law courts to test the power and scope of the statutes on the subject, so that it may be determined at once, whether we shall all submit or all revolt together against the abuse.

CIVIC LYRICS.—No. XLII.

A DOLEFUL DITTY.

(A Street Ballad.)

Oh, gentle Christian public hear
Our humble plaint to-day;
The grief is more than we can bear,—
We've lost both place and pay.
Chorus—We've got no work to do,
We've got no work to do;
Pity the poor Main Drainage staff
That's got no work to do.
Oo, oo, oo.

Twelve months ago our hearts were gay,
But now we're in the mud;
And those who raised our yearly pay
Talk of us in cold blood.
Chorus—Just what the world will do,
Just what the world will do;
Pity the poor Main Drainage staff
That's got no work to do.
Oo, oo, oo.

We're law-abiding men, you see,
Or else we would rebel
Against the public tyranny
That leaves us free to tell—
Chorus—'Tis sad as well as true,
'Tis sad as well as true;
Pity the Poor Main Drainage staff
That's got no work to do.
Oo, oo, oo.

We worked ourselves to death on schemes,
And now we're shunted off;
We mapped and draughted in our dreams,
And caught a churchyard cough.
Chorus—Ochone, oh wirrastrue,
Mavrone, what will we do?
Pity the poor Main Drainage staff
That's got no work to do.
Oo, oo, oo, pilli-lu.

CIVIS.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

BIG TREE STREET.

THIS great northern outlet of the city is a street of many historic associations. The line of the street has existed for many centuries, but it was not until the commencement of the eighteenth century that its pastoral features began to disappear, farmyards and gardens became hedged in, and its nucleus as a street in the modern sense crop up. Its present name, which is not the one that heads this paper, is owing, we believe, to the advent of a viceroy of Ireland who came over from the sister kingdom in 1781. Previous to that time it was Big Tree Lane, and the lower or suburban half of the thoroughfare bore the name of a lane until the close of the last century, when new municipal arrangements divided it into upper and lower Big Tree Street. No street that we are acquainted with deserved its title better. The trunk of the old elm stood until a very recent period; the tree witnessed many vicissitudes, and baffled many storms. Branch after branch disappeared, then the top followed by the middle, reducing it to half of its original height, yet the sturdy old trunk long bravely defied extinction, throwing out year by year young shoots and strong and extending arms. A wisp of straw now marks its site. Many a time and oft have we looked upon the old tree, and as schoolboys played the truant on the highways and byways, the crooked ways and straight ways out and about this quarter, and stretching northwards for miles through the broad plains of the "White Stranger," exploring the glens and the homes, habitations, and wigwags of the Fingalians.

Here comes our cicerone, the "Oldest Inhabitant," to pleasantly interrupt our musings and to supplement our short memories.

"Let us take a walk onward towards the

site of the old tree, Mr. O'Flanagan, and as we leisurely stroll along, I will endeavour to recall some fading recollections of what was, and what is no longer. Some there are, sir, in our midst who speak disparagingly of this locality, and have written it down as a barren one. These are of a class of men who can see nothing and remember less. History has lived in vain for them: streets to them are mere thoroughfares for locomotion, houses domiciles for shelter from the weather, and the lives of celebrated men snow-drops on the river,

'A moment white, then gone for ever.'

Thousands may die and be forgotten, but few have lived in vain, however humble; and this street, decreed as it has been, has memories that posterity will not willingly let pass into oblivion! Big Tree-street is associated with the struggles of the revival of the Drama in Ireland, and some of Dublin's most racy actors have resided in it. Lords and earls, barons, and viscounts, knights, judges, lawyers, and Irish M.P.s. of an Irish parliament, and hosts of professional men in various walks of life have lived in this street during the eighteenth century, and in its connecting outlets. A few only of them occur to my mind at present, some of whom I remember. Among the viscounts were George Barnwell, and Thomas Dawson; among the barons were Matthew Aylmer; and among the members of parliament, lawyers, and other dignitaries were Sir Lucius O'Brien, M.P.; Sir John Stuart Hamilton, M.P. (Paradise-row); Vesey Colclough, M.P., ditto; Sir Thomas Blackhall; Alderman Richard Sheridan, King's Counsel; Hely Dutton, seedsman and florist, and author of 'Observations on Mr. Archer's Statistical Survey of the County of Dublin,' 'Survey of County of Galway,' and other kindred works. These men resided here at the close of the last century, but long years before Big Tree Street was celebrated as the residence of Thomas Sheridan, the father of Richard Brinsley Sheridan, and also of James Elrington, who was upwards of twenty years the chief ornament and delight of the Irish stage. Thomas Elrington died in Big Tree lane, and lies interred in St. Michan's Churchyard, near the remains of his father-in-law, Joseph Ashbury, to whom the Irish and English drama is much indebted for its revival. Mr. Ashbury died at the advanced age of 82, and his connection with the Irish stage dates back to the period of the Battle of the Boyne. The Lord Lieutenant of Ireland in 1781-5 was very fond of the drama, a good patron to actors, and he commanded plays twice a week constantly. He liked Elrington very much, and the latter attended the former's levees often. His Grace the Duke is reported to have attended several of Elrington's entertainments given at the "Cloysters" on Inn's-quay to the lord chancellors, judges, and members of the Bar. There was no actor of his day held in more estimation, or courted as much by the nobility and gentry. When at the height of his popularity in Dublin, the managers of Drury Lane Theatre, London, offered him any price he wished to name if he would engage to enlist under their banner for a term of years: but our Dublin actor, though occasionally obliging the Drury Lane management, modestly refused to accept their offer for a number of years, saying, 'I am well rewarded for my services in Ireland, and I cannot think of leaving it for any consideration.'

"Thomas Sheridan, sir, was an honour to Ireland and the Irish stage. He was one of the first, if not the very first, who reformed its abuses both as an actor and a manager, and suffered much opposition and disaster in consequence from the bullies of the day, who styled themselves gentlemen because they carried a sword and could get up a faction to support their disgraceful conduct. Sheridan, while a manager of Smock Alley Theatre in Dublin, was followed on one occasion to his house in Big Tree Street by a party of genteel ruffians, who intended to assault him because he resented being dictated to by them in the theatre; but the party found, when they

reached Sheridan's house, that he had provided for giving them a warm reception, and they retired discomfited. The ringleader of these disturbances was a certain Mr. Kelly; and when brought into the law courts for assaulting Mr. Sheridan at the theatre, he preferred a cross charge for a similar assault on the part of the actor. However, the jury brought in a verdict of guilty against the chronic disturber, with a sentence of £500 fine and three months' imprisonment. During the trial, when Mr. Sheridan was giving his evidence, the counsel for the prisoner got up and said, 'I want to see a curiosity. I have often seen a gentleman soldier and a gentleman tailor, but I have never seen a gentleman player!' Sheridan modestly bowed, and replied, 'I hope you see one now.' The lawyer asked no more questions, but sat down like one whose occupation was gone. Notwithstanding Kelly's bad behaviour, after suffering a week's imprisonment, and being deserted by his former companions, Sheridan interceded with the Government, at the prisoner's request, for a remission of the fine, and Kelly was bailed out, acknowledging his error. This was a great triumph for Sheridan and the Dublin stage, which was previously at the mercy of a set of vagabonds who thought they could tyrannise as they liked over law, decency, and order. Some few years later, while Sheridan was still a resident in this street, his theatre was gutted and its scenery destroyed by a faction among the audience, whom he refused to propitiate by acceding to their demands. The celebrated Peg Woffington vainly appealed with all her eloquence on this occasion to the mob in the theatre to assuage the threatened violence of faction, but the work of destruction was carried out. After this cruel treatment, Sheridan gave up the management and retired for a while to London. It is not necessary that I should enter more fully into the particulars of Mr. Sheridan's career, or give names and dates for his engagements. I merely recur to a few points in his life that connect him with the locality in which we now are.

"This street was entirely private houses once, but even some years before the close of the last century shops had sprung up here and there, and builders and stone and marble masons' yards made their appearance. Several merchants lived in this street, and doctors, schoolmasters, and artists of the old school. James Standish, a seal engraver, a contemporary of Mossop, lived here at the end of the eighteenth century; and one Mills, a printer, and Fergus Vaughan, a somewhat famous writing-master, lived hard by in Paradise-row. About the same period lived a carpenter named Darley, who appears to have been a member of a famous stone-cutting family of the same name, who were spread in different parts of the city. I am not able to say at present whether Mr. Darley, the architect, who was known some years ago in Dublin, is a descendant of this family.

"In Big Tree-lane, in the reign of George I., a number of Huguenots with some more citizens formed themselves into 'The Florists' Club,' for the purpose of furthering the cultivation of flowers throughout the kingdom. They held their usual meetings for several years in the noted 'Rose Tavern,' and gave premiums to those among their members who shewed the most beautiful flowers. This flower club continued to exist till the close of the reign of George II., and the tavern was celebrated for a half century later. The descendants of the exiled Huguenots thus spread a love of flowers among our people, and gardening grew up by degrees. It is not a far stretch between the 'Big Tree' and the Botanic Gardens and Delville in Glasnevin, where Swift, Addison, Tickell, Dunkin, Delany, Parnell, and others cultivated the Muses at the same time they cultivated a love of flowers. Delany's little garden at Delville, of which the witty Dean of St. Patrick's has left us an amusing description, having an extent, according to Swift, that 'a snail would creep round it in a minute,' was after all, despite the caricature, a well laid-out garden.

"I have heard it said often, sir, that the 'Big Tree,' so called, was planted by Swift, but I doubt the fact exceedingly, for I believe the tree existed in a flourishing condition many years previous to the birth of the Dean. Tradition is generally an unsafe guide, and I cannot accept the statement as a fact, though I would be very glad as one to be assured on positive testimony that the old elm was planted by the hands of Swift. The tree was always an old landmark; and more than one poet has apostrophised it. Nearly thirty years ago the poet cabinetmaker John Fraser (J. De Jean) devoted some pleasing verses to its associations in his 'Poems of the People.' The old red-brick mansion that stands behind it was the old Manor Court of Grangegorman and Glasnevin district. The old seneschal, before the passing of the Municipal Reform Act, sat in Dublin every Friday, at Dunleary (Kings-town) every alternate Friday.

"The causes were tried before a jury, and debts to any amount were recoverable at a small expense. Some idea of its business may be formed when I mention that from 900 to 1,000 causes were heard annually. Many an amusing trial took place at this old Manor Court, whose jurisdiction extended over a portion of the town and city, comprising the baronies of Coolock, Castleknock, half Rathdown, and the Lordship of St. Mary's Abbey.

"Architects and builders have been busily at work since the dawn of the present century in designing some good public buildings on or contiguous to the line of this street, but I must leave for another visit the relation of some particulars about these and other buildings right and left. There are certain residences up and down this long thoroughfare which present some curious features and dates that require being cleared up. Many a northern mail coach and car and post-chaise have I witnessed on this road in the heyday of youth; and many a march past of white-trousered soldiers on their way to and from the Northern Athens, with their sweethearts and wives on their trail, and their regimental bands playing 'The Girl I Left Behind Me.'"

Being unable to complete our explorations in one day, we agreed to pay a second visit to Big Tree-street on a future occasion, with our staunch and right truthful cicerone, "The Oldest Inhabitant."

THE CLOTHWORKERS' COMPANY'S NEW CHURCH.

THE ceremony of laying the foundation-stone of a church to be erected in Prebend-square, Islington, London, by the Clothworkers' Company, was performed on the 25th ult. by Mr. J. Bazley White, Master of the company, in the presence of many members of the court of assistants. The church is to be built in accordance with an act of Parliament recently obtained by the company for the removal of William Lambe's Chapel, in Monkwell-street. The endowment has been enlarged, and the site chosen for the church to be erected out of the proceeds is a piece of ground on the Packington Estate, of which the company are trustees.

The master of the company, in the course of his address, said, in regard to the founder of the charity of the Old Guild, William Lambe was a man who died (as nearly as may be) 800 years ago. He settled here when the Flemings came over to England to establish clothmaking and clothworking, and, going into Kent, he took his abode in that sweet country place, Sutton Valence. Being to a certain extent an ambitious man, he thought he could better his fortune in London, and he came here. Being, as we may suppose, a singing man, he got into the Chapel Royal of St. James's. Henry VIII. formed a certain sort of friendship with him, and ultimately, on some very easy terms, gave him a chapelry in the neighbourhood of London-wall—the property that we now occupy. There was there, we may suppose, a hermit, a

member of a monastery in another part of England, who had power to receive money for offering up prayers. When William Lambe got to the end of his life (having previously become a member and then Master of this company), he left property to it upon the condition that prayers should be performed there "for ever and ever," as the terms of wills were in those days.

The Master then laid the stone in due form. It bore the following inscription: "The Church of St. James the Apostle, of the Foundation of William Lambe, Citizen and Clothworker of London. This stone was laid 25th July, 1873, by John Bazley White, Esq., Master of the Clothworkers' Company." In a cavity in the stone a glass case was placed containing one coin of each denomination coined in 1873, with Maunday money; copies of the *Times* and of the *City Press*, and a copy of the Act of Parliament under which the church is built, with the elevations and plan of the church on parchment, and a list of the master, wardens, and court of assistants of the company.

The church, which is to have free sittings for 500 people (only a few being reserved for the members of the company), is to be in the Early English style. It will consist of a nave with north and south aisles, and an apsidal ending. The west end is lighted by five lancet windows, with a large wheel window over them. There are also clerestory windows. The church is to be surmounted by a plain but graceful stone spire. The interior will be very simple, but light and cheerful, with carved stone pillars and a timber roof. There is to be an organ gallery. The church will probably be distinguished as "St. James's, Prebend-square," Mr. F. W. Porter is the architect; Messrs. Dove Brothers, contractors; and Mr. T. Fraser, clerk of the works.

The Clothworkers' Company is one of the twelve London companies which constitutes the Irish Society, who held nearly the whole property of Londonderry in their possession at one time, acquired at the time of the Plantation. This company has, we believe, parted with their Irish estates, and others of the London City Companies are meditating a like action. The manner in which these Irish estates were first obtained by these London companies cannot be defended, and it has long since been admitted by the companies themselves. This is an age of reform, and it is not unlikely a Government measure will alter the tenure in regard to these Irish estates without disturbing the ancient landmarks of Derry Calgach.

CORRESPONDENCE.

DEPUTY COUNTY SURVEYORS OF IRELAND.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have asked the editor of a city contemporary, Who and what are the Civil Servants of the Crown? and up till the present these queries remain unanswered. It appears you are under a mistake about the Deputy Surveyors being such, else why not Government (or Mr. Lowe) have included us, poor d—s, in its benevolent scheme of increasing the pay of even the veriest sub-constable £18 5s. a-year.

Please say in your next issue what more should be made by us to get under the fostering care of the Chief Secretary. We have passed a strict examination made by the three Commissioners of Public Works, which, I should say, entitles us to rank as Civil Servants. Would you also kindly state why such an anomaly exists, as we are unconnected with politics in any way? Doing semi-Government work for such a pittance, some of us could not consistently join in the strike alluded to in your last issue, having got the maximum salary allowed by the Act 24 & 25 Vic., c. 63, &c., excepting in the matter of travelling expenses, &c.—viz., I am drained out of £30 10s. per annum for car-hire, postage, and advertisements in the public service; this pulls down my actual income to £49 10s. These are facts that cannot be contradicted, and shew truly the heartbreaking and desponding state of the Deputy County Surveyors in this unfortunate country.—Faithfully yours, C.E.

Bagenalstown, 22nd July, 1873.

DOGGET'S COAT AND BADGE.

INSTEAD of, as in years gone by—drawing lots among the young men entered for this contest on the 1st of August, so that only six were chosen, and possibly the best left out, the Fishmongers' Company, who have for some time had charge of the arrangements, have not only considerably augmented the prizes, but have determined that, in the event of more than six men entering, they shall row in trial heats from Putney to Hammersmith, to decide what six shall row from London to Chelsea on the 1st of August. On Tuesday morning the following men were entered at Fishmongers' Hall for the contest, all being in the first year of their freedom as watermen, and were thus drawn in heats:—First Heat—George Tarryer, Bermondsey; Thomas Arthur Bolt, Lambeth; Benjamin Bultery, Long Ditton; Edward Thomas Brunewell, Wapping. Second Heat—Henry George Messum, Richmond; James Thomas Edridge, Billingsgate; John George Kent, Rotherhithe; Edwin Manning, Lambeth. Third Heat—Felix George Ray, Westminster; Thomas William Christopher, Limehouse; Gaddis Beatty, Battersea. They assembled at Putney, on Wednesday, 23rd ult., at twelve noon, the first two in each heat to row for the coat.

[The name of Thomas Dogget is generally looked upon and spoken of as one belonging to the sister kingdom, while in reality Dogget was an Irishman and a native of Dublin, having been born, we believe, in Castle-street. He was an actor and dramatic poet of some celebrity in his day, his principal role being the representation of comic characters. His name was associated for some time with Drury-lane Theatre, of which house he ultimately became joint manager. At his death in 1721 he left a legacy to provide a coat and badge, to be rowed for from London Bridge to Chelsea by six watermen yearly on the 1st of August, the day of the accession of George I. to the throne of England. Thomas Dogget was neither the first nor the last Irishman who left legacies for purposes in London in the benefit of which his countrymen have not been permitted to participate. In the great annual event to take place upon the Thames this day there will be great greetings and rejoicings, but the name of Dogget, when toasted, his nationality will either be ignored through general ignorance, or he will be credited with what he was not. 'Twas ever thus.]

DUBLIN MAIN DRAINAGE WORKS.

At a meeting of the Main Drainage Committee last week there were opened the tenders for the works submitted pursuant to advertisement, which were as follows—viz., from Messrs. Nowell and Robson, of 2 Cannon-row, Westminster, for the entire work, £968,800; Messrs. Edington and Son, Glasgow, for contract No. 1, £479,949; Mr. William J. Doherty, of the South Quay Works, Dublin, for contract No. 1, £418,152; for contract No. 2, £178,647; for contract No. 3, £178,855—or, for the entire work, £775,154; Messrs. Michael Meade and Son, for contract No. 3, £254,185 17s. 11d.; Messrs. Thomas Wardrop and Sons, Dublin, for contract No. 2, £278,800; Mr. Thomas Pearson, of Kennington-cross, Lambeth, Surrey, for the entire work, £968,000; Mr. Thomas Webster, of 8 St. Martin's-place, London, for the entire work, £935,383; Messrs. William and John Pickering, of 21 New Bridge-street, Blackfriars, London, for the entire work, £940,900; Messrs. Smith, Finlayson, and Co., of Victoria Chambers, Westminster, for the entire work, £890,000; Mr. George Furness, of 1 Westminster Chambers, London, for the entire work, £978,000; Messrs. Jameson, Wilson, and Co., for contract No. 1, £392,026.

The committee, having considered the tenders, passed the following resolution, viz:—

"Resolved—That in the opinion of this committee these tenders, the lowest of which is very nearly three times the estimate, are so excessive, and be-

yond the capacity of the citizens to bear, that we make a special report to the Council; but, before doing so, we call on the engineers to make such report as they may think fit in explanation of the extraordinary cost."

From some correspondence which has taken place upon the subject, we give the following extracts from the letters of Mr. M'Evo, the Chairman of the Kingstown Commissioners, and from Mr. Austin, a Clontarf Township Commissioner. According to Mr. M'Evo,

"The 'estimate' of £300,000 was for the works according to the plans deposited in November, 1870.

'That in the progress of the bill through Parliament considerable additions to those works were made to get rid of the opposition of various opponents—among others, the Board of Trade, the Port and Docks Board, the Clontarf Commissioners, the railway and canal companies, &c.

That since the passage of the Act further additions have been made by the Main Drainage Committee or its engineers, for various purposes, useful or ornamental, but all of which were not strictly necessary for the purification of the Liffey.

That since 1870 and 1871 the cost of nearly everything required in the construction of the sewer and subsidiary works has increased from 30 to 80 per cent.—perhaps 50 per cent. might be taken, as stated by an English engineering journal, as the average advance to be provided for by a corresponding advance in contractors' estimates and tenders.

Had the citizens of Dublin, the wealthy merchants and ratepayers interested, displayed public spirit to the extent of contributing the means for an effective opposition to the Drainage Bill of 1871, it could not have passed into law. The municipal and other incorporated bodies who had funds at their disposal for effective opposition, were bought off on conditions which, while they served the purpose of saving the bill, made it practically impossible to carry out the scheme.

Those who desire the sanitary improvement of Dublin should not be discouraged by a result foreseen at the time (see a letter of mine of June, 1871, published by you). An eminent engineer, who has before now been consulted by the Corporation, was of the opinion in 1871—and, no doubt, is so now—that the expensive scheme then sanctioned was needlessly extravagant; and that by a simpler and less expensive mode the purification of the Liffey could be effected. Would it not be well that the Corporation, even now, carried out the idea adopted by them in 1869 (but dropped for no satisfactory reason) of a Royal Commission of Inquiry, such as that which proved the Vartty to be the best scheme for the water supply of Dublin?"

Mr. Austin takes exception to some of Mr. M'Evo's remarks, and gives an explanation of the action attributed to the Clontarf Township Commissioners. Whether this is sufficiently satisfactory, we will leave it to the public to judge. Mr. Austin says:—

"As a Commissioner of Clontarf Township, whose interests were very much at stake in the matter, I became tolerably well acquainted with all its details, and also of the opinion generally entertained respecting it, and I think I may safely assert that no amount of opposition would have prevented its passing into law.

I was present before a committee of the House of Commons, on behalf of myself and other property owners of Clontarf, as well as to represent the township commissioners, and it became apparent to me at a very early stage of the proceedings, that the committee were determined to pass the measure. The evidence produced showed that some such scheme was urgently required, and no other was offered.

With respect to the Clontarf opposition, this matter was left very much to me, and my efforts were entirely directed to protect the interests of the township, which were seriously threatened, and not with any unnecessary hostility to the measure itself, of which I (in the main) have always approved.

Mr. M'Evo's suggestion of abandoning the present plan, and looking for a better, would be simply ruinous. According to all the evidence produced no better can be found, and such a course would reopen the whole question, cause years of delay, and revive all the angry discussions between promoters and opponents, and would in the end be as expensive.

I think the Corporation have several times asked for a Royal Commission to inquire into the subject, and were met with the reply that a Royal Commission would be costly, and could throw no additional light on the matter.

It would be presumption of me to suggest any way out of the difficulty; but it might be practi-

cable and desirable to proceed with the work under some one of the contracts (whichever would be most advantageous), in which case the other portions of the scheme should be postponed until additional powers were procured from Parliament."

Doctors will differ and commissioners will disagree, and the Corporation, of course, as a council, will defend its conduct. The greatest criminal in creation is allowed the privilege of defending himself, and sometimes succeeds in making an impression. This generally occurs after prisoner's counsel has finished his speech and the verdict of the jury has been determined. In respect to the collapse of the Dublin Main Drainage scheme for the present, we think the less that is said by the Corporation the better. The citizens have been taxed to death already in supporting preliminary law and parliamentary costs, and special and consulting engineers' opinions. When will there be an end to the scheming, jobbery, corruption, and putrefaction that signalises the condition of this wretchedly misgoverned city—When?

"IRISH MANUFACTURES."

DAMAGES AND COSTS.

WE scarcely remember, without referring to our back volumes, how many times we have been threatened with "the strong arm of the law." Architects, ecclesiastics, quacks, and periodical vendors, one after another, have tried their hand on all-mighty missives. The majority of them were our own countrymen, and we are bound to confess that scarcely one of them, though desperately intent in going to law, evidenced the neighbourly example of "live and let live" by paying 6s. 8d. to their solicitor. How the deuce can they think that the majesty of the law can be supported in the Irish capital if the bread is taken out of the mouths of our poor attorneys? Our enemies begin their letters by telling us that they intend to employ a solicitor, and hand their case over at once to his care. A second and a third letter sometimes reach us, telling us similar facts, but in language with a *double entendre*. Three times 6s. 8d. is exactly one pound sterling, and only think how cruel it is on the part of these intending prosecutors to be robbing a deserving class of men and frightening us for no reason. Oh, but there is a reason, but we are too obtuse to understand "feelers"; and as we don't compromise, much valuable epistolary correspondence goes for nothing. In the case of

SMOKE V. IRISH BUILDER.

we have received the following letter:—

"SIR,—Several months ago there appeared in your publication a most false and defamatory libel, which is clearly actionable. You state that 'Smoke's Bog Fir Fuses,' though announced as being Irish manufacture, were actually prepared, and all their belongings, in London, and that I am only the agent of another agent. I consider, sir, this is a dastardly libel. You also state that my matches are tipped with the same material as Bryant and May's silent lights, which only light on the outside of the box, whereas my matches do not light on the box, or inside the box. There is a peculiarity, let me tell you, sir, about my matches. They are longer than all other matches, and are dipped at both ends. By breaking the match in twain and rubbing both ends together their ignition is effected. There is a double advantage in this, that the public are not slow to appreciate, despite of your insinuations—if one match goes out, there is another left lighting. I have also to state, sir, that the illuminated labels on my match-boxes are *bona fide* Irish manufacture, in paper, printing, and ink. It is true that I am agent for other match manufacturers, but I never substitute their goods in place of my own, which I can allow to stand upon their own merits, and not suffer by the competition. In conclusion, unless you retract your libellous charge, publish this letter, and make an ample apology, in your

next issue, I will instruct my solicitor to institute proceedings immediately.—I am, &c." "CORNELIUS SMOKE."

A capital advertisement, at all events, Mr. Smoke has got out of us for nothing, besides saving his 6s. 8d. We don't know whether Mr. Smoke's matches are fit to light, although every sensible person whom we conferred with acknowledged they were fit to burn—boxes, labels, and all.

We made three or four applications for leave to see Mr. Smoke's great match factory, with the machinery in motion and the hundreds of little children making and packing the boxes. There was always something wrong, however, or somebody was absent. The Irish manufacture of "Bog Fir Fuses" exists in print we are bound to say, and they are sold by Mr. Smoke, and he says he manufactures them, but some people have still the habit of contradicting him.

SANITARY NOTES.

KINGSTOWN.—At a meeting of the Town Commissioners, the chairman intimated that the Dalkey and Blackrock Commissioners had refused to join with the Kingstown board in the sewerage question. A number of plans had been proposed for the township, and as a difference of opinion existed as to their merits, it would be advisable to have the opinion of an eminent engineer on the subject. It was, therefore, proposed: "That all the sewerage plans heretofore proposed for the drainage of Kingstown be referred to a consulting engineer to report upon, with such recommendations as he may think expedient or necessary." The chairman suggested Mr. Hawkshaw, the Royal Commissioner, should be appointed as consulting engineer.

BRAY.—At a meeting of this board, a letter was read from the Earl of Meath stating that he had seen a report in one of the daily papers, that the Bray magistrates had postponed the hearing of cases of alleged encroachment by traders on the pavement of the township, to enable the defendants to obtain legal assistance. The letter impressed on the Town Commissioners the necessity of asserting the public right to the entire street and pavements; pointed out that the traders had no right whatever to encroach thereon; and referred to former convictions and fines, the records of which would be found on the Bray Borough Court books. The letter further advised the immediate obtaining of legal representation when the cases came up again for adjudication. The board resolved upon doing so unanimously. It having been stated to the board that the local hospital for incurables was about to be vacated, it was resolved to obtain possession of it as a town hall, if the terms were suitable. A sum of £50 was ordered to be paid to the contractor of the new bridge road to Bray common, on the certificate of the surveyor that the work was progressing satisfactorily. Mr. Breslin's bill of expenses for attending in London relative to the Dublin Gas Bill was allowed, and he stated that he had entirely allocated it to local band subscriptions and other matters conducive to the interests of Bray. Several commissioners complained that the watering and cleansing of the township streets and roads were not efficiently carried out. The matter was referred to the head ganger for amendment.

BLACKROCK.—At a special meeting of the commissioners, a letter was read from the Board of Guardians of the Rathdown Union, suggesting the advisability of making some conjoint arrangements, as sanitary authorities, for preparing for an outbreak of cholera, should such a visitation unfortunately reach the locality. After some discussion it was decided that there was at present no suitable house in the township which could be set apart as a cholera hospital, but that it was possible to obtain a plot of ground upon which sheds might be erected, and that as there was no need for creating alarm the

commissioners of the township postponed any further consideration of the subject for a fortnight.

KILKENNY.—An agitation is going on in the marble city, concerning a proposed foot bridge at the markets, and a proposed work-house convent. Each project has its advocates and opponents: one party thinks the works can be executed for a few hundreds, and the other party a few thousands; and some of those in favour of the convent project are inclined to say "hang the expense" and "don't mind the ratepayers." A correspondent writes to the local journal, and among other matters alludes to the condition of Lacken Well. "That excellent spring, a blessing to the inhabitants of the locality, if properly cared for, but it is kept in a most filthy state—filth running down the steps and into the well, the Corporation property—spring water overflowing the walk from other sources, and the walk entirely neglected and in filth. On one part of the walk there is, for about twenty yards, a great congregation of large stones, some about a stone in weight, without the least covering of gravel or sand—water flowing everywhere! This walk was once, and not long since, a hobby for the time. A few shillings a week would get some one in the vicinity to attend to the walk, and a small sum for its repair is extremely necessary. Mr. Redmond, that excellent officer, if directed, would inform the Corporation about it and give his opinion." We are inclined to think, what is everybody's hobby is nobody's hobby. If those whose duty it is to look after the city neglect their trust, so much the worse for themselves as citizens in the end. Sanitary improvements, however, at present should be first attended to in Kilkenny before costly works are commenced, which cannot be well met without an increase of taxation.

DROGHEDA.—Drogheda and Kilkenny appear to labour under the same congestion in the lungs and chest as Dublin is at present labouring under, hence her drainage and sewerage projects are at a stand still, and even her temporary wants are unattended.

THE CITY COMPANIES AND INTERNATIONAL EXHIBITIONS.

A CONFERENCE was held at Marlborough House on the 21st ult., by the Prince of Wales, attended by the representatives of the principal City Companies of London, with the view of discussing how technical instruction might be promoted by those Companies acting in concert with the International Exhibition.

The Conference was attended by the Right Hon. the Lord Mayor, the Earl of Carnarvon (Chairman of the Board of Management of the Commissioners), Sir William Anderson, K.C.B., and by the following representatives of companies:—Mr. L. A. Outhwaite (Blacksmiths), Mr. John Addison (Clockmakers), Mr. J. Bazley White (Clothworkers), Mr. G. N. Hooper (Coach and Coach Harness Makers), Mr. Henry Capel (Coopers), Mr. John Loat and Mr. E. Burkitt (Curriers), Mr. S. C. C. Fish (Drapers), Mr. H. W. Jewesbury (Dyers), Mr. James Spicer (Fishmongers), Mr. T. Mowlem Hurl (Glass Sellers), Mr. H. W. Johnson (Gold and Silver Wire Drawers), Alderman Stone, Haberdashers, Mr. H. A. Smith (Ironmongers), Mr. James Winter, Jun. (Joiners), Mr. J. Russell Freeman (Masons), Mr. M. D. Longden (Mercers), Mr. Charles Gordon (Merchant Tailors), Mr. S. M. Hubert (Plasterers), Mr. H. Harris (Saddlers), Mr. J. G. Nichols and Mr. J. V. Shaw (Stationers), Mr. G. Offer (Tin Plate Workers), Mr. J. E. Saunders (Wheelwrights), Mr. A. Gillett (Woolmen). Mr. Henry Cole and Major-General Scott also attended the Conference.

The Lord Mayor having introduced the several representatives to his Royal Highness,

The Prince of Wales opened the proceedings by thanking the gentlemen present for their attendance. The interest which the City Companies felt in the subject which had called them together was shown by the number of the gentlemen whom they had deputed to represent them, and such a meeting proved to him that the object was already half attained. His Royal Highness stated that he had

learnt that some of the companies intended to send to the present Exhibition scholars attached to the schools under their care, and he trusted the other companies would follow their example, and thus co-operate with the commissioners in their great task of promoting the study of science and art as allied to productive industry. His Royal Highness then called on Lord Carnarvon to give further explanations to the meeting.

Lord Carnarvon said that important as had been the great public questions with which the companies of the City of London had at various times manifested their sympathy, and which they had aided by their wealth, he doubted whether any one of them deserved more their attention than the great question of the present day, namely, the best means of diffusing technical instruction amongst the people. It was to aid in this work of allying science and art with productive industry that the scheme of the Annual International Exhibitions at South Kensington had been started, and, great as had been the difficulties in the way of an exhibition to be held every year, he was sanguine of its ultimate success. He thought that bodies of such influence and wealth as the City Companies could give the Commissioners much assistance. The promotion of technical education through the exhibitions was in the interest of all of them. His lordship entered into details of the scheme of exhibitions, and pointed out that every branch of industry had a year allotted to it for its representation, three or four branches being included in each year's exhibition. Lord Carnarvon acknowledged the great interest which the City Companies had always taken in the work of public education, as manifested by the numerous schools under their management. He recommended that, as a present step, the schools themselves should be sent to the Exhibition, or certain scholars should be selected, who should attend the daily lectures which the Commissioners had arranged to be given in the presence of the objects themselves. He also suggested that the City Companies might place tickets of admission at the disposal of the London School Board, who might select scholars to receive them as prizes. He described the effect which such a visit to the exhibition might have on a youth who only required a spark to kindle the intelligence which he possessed, and concluded by saying that if Great Britain intended to keep the prominent industrial position she had acquired amongst all nations, she must devote her whole energy to the advancement of the people in the arts and sciences as applied to industry.

The Lord Mayor being called upon by his Royal Highness, acknowledged the accuracy of Lord Carnarvon's statement, that the City Companies had already done much to promote the cause of technical instruction. Some—for instance, the Clothworkers and Coachmakers—had made grants of prizes for the most meritorious productions of workmen exhibited in various branches of trade. Others had instituted scholarships in science and art, whilst the Stationers had instituted a highly successful series of lectures. These had been the efforts of single companies, but much more important results could be obtained by union, and especially by a union promoted by his Royal Highness. His lordship thought that the idea of connecting the City Companies in promoting the objects of the Exhibition Commissioners was well worthy of the attention of the City Companies and that they ought to respond readily to the Commissioners' proposals. He knew that the Commissioners' views had made some progress, as at the recent distribution of prizes at Christ's Hospital he found it quite recognised that scholars would derive great advantage from visits to exhibitions and similar institutions, where they can see the actual processes and results of manufactures. His lordship added that at this time, when the rapidity of locomotion created such strong competition, and so put every one on his mettle, it was highly necessary to keep our people, if possible, in advance of the age. He therefore had great pleasure in proposing the following resolution:—"That this meeting cordially sympathises with the objects for which it has been called, and, as far as lies in its power, promises the best support and co-operation of the City Companies." His lordship added that at this period of the year it might be difficult to get some of the companies to make grants of money, or to otherwise move in the matter; and he suggested that it would be advisable that a precise explanation of the action which it was wished that the companies should take should be communicated to them in order that there might be unity of action.

Alderman Stone seconded the resolution. He lamented that the City Companies had so far been unable to combine for educational purposes, and that the results of their labours had accordingly been but limited; and he hoped that the result of

the present conference might be that, with the assistance of his Royal Highness, that union might be effected which they had been unable to achieve by themselves. He thought that those companies which had no special trade of their own to support ought to be the foremost in supporting schemes for the benefit of the public at large; and, speaking for his own company, he thought he could promise support.

Mr. Cole explained that the commissioners had determined that during the months of August, September, and October schools should be admitted to the exhibition by ticket, at threepence each scholar, and that during the month of August at least frequent lectures each day would be given on the various objects and processes exhibited. He suggested that the City Companies, in addition to sending their own schools to attend these lectures, might purchase tickets, and place them at the disposal of the London School Board, to enable them to award them as prizes. Such tickets might also be distributed among other public schools.

The Lord Mayor's resolution was then put and carried unanimously.

His Royal Highness said that he felt sure that, after the discussion they had had, the gentlemen present must be convinced of the importance of the question which had called them together. He suggested that they should endeavour to interest the companies they severally represented in the matter, and should let the Board of Management of her Majesty's Commissioners know the decision which each company arrived at.

The Lord Mayor expressed his acknowledgments to his Royal Highness for having called the conference together, and the gentlemen present then retired.

NOTES OF WORKS.

The buildings for the Dublin Distillery Company, situate at Richmond, Fairview, are now nearly complete. The works were commenced in July, 1872, and have been so far carried out with astonishing rapidity by the contractors, Messrs. Wardrop and Son, Great Brunswick-street. The manufacture of whiskey was commenced during the past week, and the directors confidently expect that their "make" will equal if not surpass that produced by any distillery in the kingdom. Mr. Charles Geoghegan is the architect. The steam-engine, boilers, &c., have been supplied by Messrs. Coates, Belfast. The engine is of twenty-five nominal horsepower, and has a governing apparatus on a new principle.

A new convent and chapel are being erected on a fine site west of Drumcondra-hill, from the designs of Mr. G. C. Ashlin. For the former Mr. John Brady, Camden-street, is the contractor; for the latter Messrs. Meade and Son, Great Brunswick-street.

The directors of the Hibernian Bank, having purchased the adjoining premises in College-green, are about adding to their bank. The designs are by Mr. Thomas Drew, and the contractors are Messrs. Collen Bros., Clanwilliam-place.

The extensive stores and warehouses of Messrs. W. & P. Thompson, wine merchants, have been largely added to. They are situated at the rear of their offices in Lower Gardiner-street, and are built in the most substantial manner. Mr. Papworth was the architect.

The works for the branch of the Great Southern and Western Railway from the King's Bridge station to the North Wall have been commenced. Mr. William J. Doherty is the contractor.

The licensed restaurant and tavern, 3 Eden-quay, known as "Bracken's," established upwards of half a century, has recently been purchased by Mr. Mark Crowley for the sum of £2,000. The concerns have undergone a complete remodelling and renovation in accordance with the style of the modern "gin palace," and a considerable sum of money expended thereon. The obstructive staircase and other projections in the old house have been removed, and a bar of fine extent obtained, with a handsome white marble-topped counter, fitted with panelled and carved screens, and displaying a range

of beautiful mirrors and ornamental as well useful fixtures on the wall. The working bar is fitted with a fine seven-pull machine, ranges of spirit cocks, and every requisite in the best style. The porter machine, which is of very beautiful design, was manufactured by Mason, of Birmingham; it was adjudged the prize medal at the International Exhibition. The framework is of walnut; the pulls, eight in number, have handsome decorated handles and Abyssinian gold mountings; the taps are of solid silver. Entrance is obtained to the bar by means of a spacious angle-porch at the junction of the quay and Harbour-court, with double doors and panelled wainscoting of varnished pitch pine, tessellated pavements, &c.; likewise through another side doorway about 20 feet lower down in the court, the former doorway having been converted into a window corresponding with the two on front, and all of which have been fitted with British plate glass in one square each. A spacious select parlor is partitioned off the general bar, and communicates with a lavatory and other accommodation. Access to the house is secured by a separate hall-door and convenient staircase, and the whole arrangements are regarded as very complete. The exterior has been architecturized in cement, with entablature and consoles at top, panelled interspaces over and between the windows, together with a new timber show-board decorated with metal ornament and finials, carved consoles, &c., over ground-floor windows. The several alterations, improvements, fittings, decorations, &c., have been designed by Mr. J. J. Lyons, architect, Ulster Chambers, Fleet-street, and carried out efficiently and expeditiously by Mr. J. Holland, Hatch-street; the plate-glass, mirrors, marble counters, plumbing, gas-fitting, painting, papering, &c., having been executed by the eminent firm of Brooks, Thomas, and Co.

Alterations and improvements, comprising new warerooms, &c., are being effected at the rear of the premises occupied by Mr. Galwey, bookbinder, Eustace-street. Mr. J. J. Lyons, architect; Mr. Holland, builder.

We are requested to mention that the patent curvilinear wrought-iron screw-gearing shutters of Messrs. Clark and Co., London, have been adopted for the new wine and spirit establishment of Mr. Dunphy, at Phibsboro', and may be seen in full working on the premises.

A factory on an extensive scale is about to be erected in the County Kildare, under the direction of Mr. J. J. Lyons, architect. The probable cost will be about £5,000 for the building only.

STATUE OF LORD LAWRENCE.

In our last issue a reference was made to Woolner's work in the account given of Foley's statue of Sir James Outram. Like the latter, the statue of Lord Lawrence will be cast in bronze, and will probably be exhibited, like Foley's, temporarily in some open space before its shipment to India. Woolner's previous works are accounted successful, particularly those of Sir Bartle Frere and Dr. Whewell. A writer in the *Standard* speaks thus of the late Governor-General of India:—"The commanding figure and expressive countenance of the present work at once suggests an able and far-seeing statesman, whose influence would be great in any cause in which it might be employed, and how successfully it was exercised in India we have little need to proclaim. The ruling powers of India have usually been equally happy in their choice of heroes and statesmen marked for such immortality as marble and bronze can give, and in their choice of sculptors. To Mr. Woolner has fallen a fair share of these Indian commissions, and he has ever shown a strong desire to deserve the confidence thus placed in him. It is hardly necessary now to speak of the distinctive power this artist has acquired as a faithful delineator of the human face—a skill we had thought admitted of little

advance; yet in the head of Lord Lawrence, under notice, we trace a higher rendering, a subtler elaboration of surface, revealing in lines of rare truthfulness the strongly individualised character of the man. Patience and noble fortitude speak in every line. The face is perfect. The attention is arrested by it as by some few examples of portraiture one lights upon among rare pictures and etchings by old masters—rich in angle, hollow and curve which tell of toil and anxious, serious cares.

"The sculptor has had to contend with difficulties which ever beset those who undertake works of this kind. Modern dress is hardly to the sculptor's purpose. A painter has the use of shadows, which he can cast athwart an ugly shape; the sculptor has no such aid as *chiaro-oscuro* affords, he must boldly meet the evils which fashion creates. Yet whoever sees the statue of Lord Lawrence, when completed in bronze, will, we imagine, hardly find reason to regret that the dress of a modern gentleman has been adhered to, for the lines want little in harmony and grace. On this question of costume, however, on which so much has been said, we desire not to dwell; we are chiefly concerned to say that the statue, as a whole, is a good work of art, worthy of the artist and of the great man whose name will appear on the pedestal."

THE "GAIETY" AND THE CELLAR.

The *Gardeners' Record* is of opinion that "The public are under deep obligation to that speculative spirit in those gentlemen [Messrs. Gunn] which has placed so much enjoyment within their reach, and their present pledges redeemed, and one other 'speculation' completed, they will have reached a laudable climax. That 'speculation' is the purchase or renting of the premises, which constitute an offensive and dangerous eyesore, adjoining their pretty theatre, and if it be not in their power to obtain possession, the Corporation should be asked to spend a few half-crowns in relieving the landlord of such a nuisance. Perhaps it is tolerated for sake of contrast, for certainly a more striking one than a yawning cellar—occupied by squalid women and children, and rusty wares—and a handsome theatre, can scarcely be imagined. The danger to limb and life, too, is insuperable, and we trust the Messrs. Gunn will do something in the matter, if it were only to rent and shut up the cellar, before the 'long nights' set in."

[If city matters were properly looked after, this cellar, as well as dozens of others through our city, should have been closed up years ago. The Public Health Committee of the Corporation have, we think, the power to deal with such cellars as nuisances.—ED. I. B.]

MACHINE-LAID ROADWAYS AND FIRE-PROOF BUILDINGS.—Mr. R. Stone, the patentee, has arranged to lay down, by a self-acting machine, a specimen of his wood pavement and concrete foundations in King William-street, City, leading from London Bridge to the Bank. This process, as described by the patentee, takes the gravel and cement direct from the carts, lifting them 20 ft. in the air, whence they fall into a gauging hopper, under which is a fly-wheel which mixes the particles while dry, and passes them on to a wet wheel, which remixes them. From thence the material passes through a feeder into a working hopper, and by a leveller is brought under a roller carrying a pressure-power of 200 lb. to the square inch. While in a fluid state the whole body is compressed into a solid slab, more durable, he says, than stone, warranted water-proof and never to crack or give way. The cost is said to be 35 per cent. less than the ordinary way of laying roads, besides being laid in less than one-eighth the time. The patentee's composition roadways, mixed with chemicals and prepared Portland cement made from Halkin mountain and flint stone, laid plain or fluted, and noiseless and not slippery, exceeds granite, he says, in durability, and at less than half the cost. Fire-proof floors and ceilings are laid under Mr. Stone's patent processes.—*Builder*.

THE CITY BASINS PROJECT.

For the purpose of placing upon record, in connection with the agitation for the conversion of the city basins into swimming baths, we give the "opinion" of Sergeant Armstrong on the subject, as read at a special meeting of the Corporation:—

"I think the Corporation cannot legally make a gratuitous appropriation of the basins, as prayed by the citizens' memorial. The basins being now unnecessary for water supply to the municipality, the Corporation are bound to make the most of them by sale, and to apply the proceeds directly and immediately to the purposes of the Waterworks Act, 1861. The Corporation can make no presents of property vested in them by special trust. The Corporation are empowered to open public baths, and if a scheme can be devised by which, utilizing the basins for bathing purposes, a profit can be secured to the taxpayers equivalent to the offered purchase money, such a scheme may lawfully be carried out, but this would be a very troublesome and perilous enterprise to embark in, and if the Corporation take my advice they will leave it to the citizens who take an interest in the project of public baths to put their hands in their individual and private pockets, and with private funds to buy the basins and work them as a private speculation. I advise the Corporation to keep to the plain and obvious path of power and duty, as pointed out by the Act of 1861, and to avoid doubtful experiments. I am against leasing for an experimental term at a rent, and of course I wholly disapprove of giving the basins for one year, or at all free of rent. The apprehended depreciation in house property, or proportionate diminution of direct taxation, is well suggested and might have title to be considered if the Corporation were otherwise disposed to yield to this prayer for a present of the basins; but I put my opinion and advice upon grounds apart from the injury to contiguous property. My advice is, first, to sell the basins; second, apply the proceeds to the purposes, direct and immediate, of the Waterworks Act, 1861; third, if the Corporation think well of it, let them construct and open public baths; fourth, do not mix up the two transactions or projects."

Without going into particulars, we may remark, this an opinion and no more. At a meeting of the Guardians of the North Dublin Union, the following resolution was passed and strenuously advocated by men of whom we expected more reason as well as more decent utterances:—

"That the Board of Guardians of the North Dublin Union most earnestly and respectfully request the Corporation not to permit the Blessington-street Basin to become a public bathing place, as it is situated in the very centre of the North City Electoral Division, and would become most detrimental to house property; and as that portion of the city has been very much improved lately by a large number of private houses and streets being built in Berkeley-street, opposite the Mater Misericordiae Hospital; and in consequence of the Rev. Canon M'Mahon having commenced building a splendid church in the neighbourhood; and, further, that several institutions are supplied with water from the canal."

One of the guardians, who was in favour of the baths, in opposing the above resolution, very truly said:—

"As to the question of the proposed church somewhere near the proposed baths, he had often heard that cleanliness was next to godliness; and if that were so, there could hardly be anything very unsuitable in the present site. Everybody admitted that the condition of the working classes in Dublin was most wretched for want of any public accommodation of this kind. It was very hard to deny them the means of enjoying a bath at a convenient locality, while at present they had to spend their time and any little money they could get in going to the North Bull or Ringsend, or else do entirely without a bath. The baths proposed would be established in such a way as to preserve them perfectly clean by means of a constant supply of water by a feed-pipe at the bottom, while the refuse water would be constantly carried off by a pipe at the top."

We think we will also be acting in accordance with general opinion on the question by giving the following observations of Capt. Brinkley, at the meeting of the Board of Guardians. His remarks are to the point, and not like others, flying in a tangent to the moon:—

"They had just now listened to two or three Corporation speeches, and he had no intention of treating them to a fourth; but if there was any fault more glaring than another which distinguished the Corporation of Dublin it was want of cleanliness, and if they were going to make any move towards improvement in that direction, he, for one, would give them every help he could. He was speaking as a man of property himself, and he was surprised to find that other owners of property, and such large employers of the lower orders, had spoken so strongly against baths for the benefit of their employes, and based their objections on the ground of injury to property. One gentleman went so far as to say the baths would be a public nuisance, and stated virtually that, as disease was threatening, cleanliness should not be thought of. But the approach of disease was, in his opinion, the very reason why every man in a public position should exert himself to promote cleanliness and thus avert disease. There was every reason to believe that the baths if established would be well kept, and would be a saving in many respects, especially so in the improvement of the health and habits of the working classes, would not increase taxation, and would not injure property. It was a mistake to suppose the people had a dislike to fresh water, for great numbers constantly bathed in the Liffey near his own place, and last year two fine little boys were drowned in it whose lives would probably have been spared had they public baths to go to. As to the water coming from the basins to the workhouse, it would be easy to remedy that by getting the supply from the canal at a distance from this, and there was no finer water than that in the canal. But let them have the baths by all means, and have them, if possible, not merely public but free. That was the great point to insist on, so as to cultivate habits of cleanliness, and if it could be done, self-respect and order amongst the humblest of the population."

The proposition of affording means of cleanliness for the working classes was defeated by two votes in the board, some of the advocates of the "stand-still" movement sophistically remarking that they did not object to public baths, but only to making a bath of the basin.

There will yet be public swimming-baths in Dublin when the fossils of the City Hall and the North Dublin Union Board will be beyond the power of washing themselves. The "unkindest cut of all" for such people would be to prohibit their barbers from giving them their last shave in this world with soap and water, i.e., a dry shave.

THE APPROACH OF CHOLERA.

LAST year the necessity for having a Convalescent Home erected close to the city led to lengthy debates in the City Hall and elsewhere. Ground was purchased, plans prepared, but in the end the whole affair collapsed. At the present time the threatened approach of cholera to our shores appears to have stirred into action some of the bodies on whom devolves by Act of Parliament the care of the Public Health. The guardians of the North and South Unions have discussed the question as to the necessity of erecting cholera sheds on a site offered by Mr. J. E. Vernon, the esteemed agent of the Pembroke estate, or on any other site agreed upon. It has been arranged that the South should have the control of the erection, the North paying half the cost, and a fixed sum per head for each patient admitted.

In the report of the proceedings at meeting of North Dublin Union Board on Wednesday, we find a communication from the Dublin Sanitary Association in which that body expresses an opinion that the construction of an hospital near the mouth of the river is imperatively called for, because the object of such an hospital would be to prevent the introduction of cholera into the city by providing for the immediate reception, not merely of seamen, but of any persons who may unfortunately arrive in the port affected with

the disease, and the conveyance of whom through the city to the existing hospitals would be a source of much danger to the citizens.

It appears that the military authorities have objected to the Pigeon House banks site on account of its proximity to the Fort, with its few dozen of soldiers. Leave must, it appears, be obtained from Government through its Irish Under-Secretary. More red-tapeism!

The clerk read a letter from the Public Health Committee of the Corporation, enclosing the following report forwarded to them:—

"29th July, 1873.

"GENTLEMEN,—In accordance with your request, and having read the communication addressed by the Deputy-Quartermaster-General to Mr. Vernon we beg leave to report as follows:—We are of opinion that any case of cholera which may be imported from a foreign port should not be conveyed into the city, but should be treated in an hospital, but as isolated as possible. No site more suitable for the purpose than that wisely and generously granted by Lord Pembroke's agent can be had. It is portion of a field along the southern side of the Pigeon House wall, opposite to No. 5 red buoy, two-thirds of a mile from the end of Cambridge-road, Ringsend, and one-third of a mile from the Pigeon House Fort respectively. The ground is about 190 ft. wide, 8 or 9 ft. above high water, and although reclaimed it is well drained, as is evidenced by the crop of hay it has just produced and by the absence of marsh plants. The cholera sewage should be carried to a pit some yards off and therein disinfected before discharged into the sea. With such precautions and having regard to the distance from any habitation, we are of opinion that no danger whatever of spreading the disease can arise. In a properly-constructed hut, raised from the ground, a patient with cholera can be most suitably treated at this site, where the air is so pure.—(Signed),

"E. D. MAPOTHER, Medical Officer of Health.

"H. MINCHIN, M.B., Physician to the North Union.

"JOSEPH GRAHAM BYRNE, Physician to City Prisons.

"CHARLES A. CAMERON, City Analyst."

We heartily concur in the opinion expressed in the above report, and hope that no delay will occur in getting up the sheds.

HOME AND FOREIGN NOTES.

THE PEOPLE'S PARK, BLACKROCK.—The Township Commissioners have decided upon borrowing the sum of £3,000 at 4½ per cent. for the purpose of carrying out this very useful project.

FOREIGN SPECS.—The shareholders in the company for building markets and abattoirs for the city of Berlin, many of them English, have come to grief. The company appears to have been robbed, as usual we might almost say, right and left by agents. If Englishmen, instead of sending their money abroad, were to employ it at home, they would not merely play a more patriotic part, but would find it pay better five times out of six. With many the promise of a good return is, unfortunately, everything. If Russia, for example, were to offer 10 per cent. for money wherewith to damage this country in the East, there are plenty of Englishmen who would lend it.—*Builder*.

ASPHALTE FOR STREET PAVING.—At a meeting of the City Commissioners of Sewers, held at Guildhall, on Tuesday, Mr. Frederick Farrar presiding, a memorial, signed by the owners of 15,000 horses, was presented against the continued use of asphaltic for street paving in the city. It stated that that mode of pavement was more dangerous to horses than any that had hitherto been used in the streets of London. Mr. Church, the secretary of the London General Omnibus Company, and the manager of Messrs. Pickford and Company, attended in support of the petition, and stated that accidents to their horses had increased 50 per cent. since the introduction of asphaltic. The memorial was referred to the Streets Committee. The court afterwards, on the recommendation of that committee, ordered that Gresham-street, St. Ann's-lane, part of the Old Bailey, Bow-lane, and Wood-street should be paved with asphaltic of the Val de Travers Company; and the Old Jewry, Clement's-lane, Mincing-lane, and Castle-street, Holborn, with that of the Limmer Company.

ACOUSTICS.—The acoustical theory of the construction of concert-halls and of opera-houses is a vexed question. Mr. H. L. Statham, jun., Associate of the Royal Institute of Architects, in a thoughtful and able paper, read recently at one of the general meetings, has sought to solve the mystery; but until we have practical evidence of the success of his system, we must take leave still to maintain our own opinion on the matter, which we ventured to express during the discussion regarding the Royal Albert Hall. We believe chance has much to do with the sound in any building; and we ground our belief on an examination of the leading opera-houses and music-halls in the chief capitals of Europe. The result of trials in various parts was that everything proved to be variable—that whereas in some rooms extreme distance was required for the best place for hearing, in others close proximity to the orchestra was a *sine qua non*. Nothing can be more contradictory—nothing more eccentric—than the way sound travels. Resonance is found more or less in excess without a semblance of a cause; the voice may be heard best in some halls when quite crowded, and in others when quite empty, and in some when only partially filled. These results are most contradictory and curious: the construction of the ceiling, the presence of upholstery, the use of wood, stone, marble, or plaster—it is all the same; sound seems to set at naught all the architectural appliances that have been resorted to, all acoustic provisions so confidently relied upon, in oval or circular forms of buildings. Any amateur who has tried to penetrate into different parts of the Crystal Palace during the Handel Festivals will find the effects most variable; and what is particularly puzzling, the place that seems best on one day will prove the worst one the very next. It would seem as if the temperature or the masses assembled had something to do with the sound. Some of Mr. Statham's suggestions are, however, practical, and may be useful.—*Athenæum*.

ADULTERATION OF FLOUR WITH STONES.—At the meeting of the guardians of the North Dublin Union on Wednesday last, Captain Brinkley referred to some flour supplied to the army which had been condemned as producing gritty bread unfit for use, and demanded, in the interests of the paupers, when the guardians were from time to time called upon to obtain flour from contractors, to know from the authorities the name of the contractor in question. He was aware himself that stones are at present imported into Dublin from Wales, ground into powder here, and then mixed with flour and sold to the poor. Why was it that the Corporation, who pounced upon petty hucksters who committed comparatively trifling offences, permitted the great adulterators to go scot-free?

DEATH OF WINTERHALTER, THE PAINTER.—A telegram from Frankfurt announced the death of Frederick Winterhalter, the painter, on the 8th ult., of typhus fever. The deceased was born at Baden in 1806. He first came to England in 1842, and at once obtained the patronage of the Royal Family. He executed many works for her Majesty, and his portraits gained for him great reputation as a Court painter.

THE CHAPTER-HOUSE, WESTMINSTER.—We (*Athenæum*) understand that it is not yet definitely settled how best to fill the windows of the Chapter-House, Westminster Abbey, with stained glass. It appears to us most desirable, if not indeed absolutely necessary, to introduce *grisaille* in these windows to a large extent, reserving for one or two of the openings the splendours of concentrated colour, and the interest of whatever subjects it may be proper to represent. Narrow borders, and, perhaps, a small number of shield arms, will suffice to relieve the breadth and simplicity of *grisaille*. Nearly all modern attempts at decoration with stained glass err from excess of colour, which, even when fine, as is rarely the case nowadays, is mere destructive, part by part acting on each other. This makes any noble and simple general effect impossible, and is injurious, if not fatal, to the surrounding architecture. In the later period of Gothic art, when the style was losing its severe grace, architecture was sacrificed to splendid glass, and buildings became little else than frames for chromatic displays; as this went on, the application of art to glass on logical principles of decoration was neglected, and mere transparencies of the most absurd and unfit kind were introduced, because men desired to have pictures which should surpass oil painting itself. Thus mere transparencies, such as we unfortunately see revived in Glasgow Cathedral and St. Paul's, became the rage, and the art of glass decoration perished in vain attempts to produce results which belonged to oil painting alone. Do not let these blunders be repeated at the national cost! *Grisaille*, such as appears so beautifully in the Five Sisters in York Minster, should be used at Westminster:

there is decisive precedent for this. When the Chapter-House was built, the mode we have suggested obtained in all the best examples of which we have knowledge. In a building constructed for a council chamber, where documents had to be read and speakers seen distinctly, we may be certain that the ancient decorators would have used *grisaille* in abundance, because it admits plenty of light. Fine, delicate, and silvery, but not cold colour, may be insured, in *grisaille* more certainly than by more pretentious and gorgeous modes of enrichment. The beautiful result may be seen in several of the works of Messrs. Marshall & Co., now, or recently exhibited, at South Kensington.

TO CORRESPONDENTS.

NATIVE LITERATURE.—For some time past there has been a slight increase in the number of works exclusively executed in Ireland; but there are still a number of publications which are either partially or wholly executed in London, though professing to be issued in Dublin.

IN RE ESSEX BRIDGE.—A second temporary foot-bridge is unlikely to be constructed across the Liffey during the rebuilding. The reasons are obvious: blood cannot be squeezed from a turnip.

THE UNIVERSITY MAGAZINE.—It is stated that this once famous Dublin magazine, which has been for several years a "changeling," has passed into native hands again. We hope its future will evidence improvement, and that it will once more become racy of the soil.

PUBLIC WORKS.—See article in present issue.

PEAT.—The mechanical systems are discussed in another column. A combination of both is, we think, desirable.

FIREHOLD.—Would necessitate a detailed description; and, on the other hand, we think it would be more satisfactory in the end if you begin by consulting a respectable architect.

THE STRAND.—The place so called formerly was a continuation of the ground to the north of Lower Abbey-street, a portion of which is now occupied by the docks and what is known as Amlens-street. The North Strand was a subsequent division in a municipal sense, and commenced at the Circular-road intersection, extending to the Tolka river.

THE NEW CORPORATE PROJECT.—Some Town Councillors can no more keep a secret than the most loquacious old crow. One wishes to tell us a secret which reached us before he knew it himself. Yes, but what he heard is only a blind designed to hide the real secret. The cat is let out of the bag when the mice have got a hint to make themselves scarce.

"A VISIT TO EPPS'S COCOA MANUFACTORY."—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*.—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

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The Irish Builder.

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The Future of Architectural and Engineering Practice.



IN the British Islands at least, a limit must be reached at a not very distant period in the practice of the Civil Engineer as apart from the Architect. True, there are fields to explore, worlds to conquer, and triumphs to achieve in drainage, tunnelling, and bridge, road, and rail construction; but all the fields are circumscribed in these kingdoms. Abroad, on the American and Australian continents, or in Asia or Africa it is otherwise. The question arises then, would it not be a wise and judicious proceeding to amalgamate both professions in Great Britain? Though pursued as separate professions at present, there exists no reason why they should not be combined as formerly. Nothing would be lost to society, as at present constituted, by the amalgamation, and all interests would be better served. For the life of us we cannot see why any jealousy should exist between professions which had one common origin, and whose real separation is not yet one hundred years old. The men who constructed the baths, viaducts, sewers, roads, and temples of Rome were engineers, as well as architects; and we may ask, would Rome have been better served if the profession had been split into two branches? Docks, railroads, and modern tunnels and water-works differ but little from the works executed by ancient architects, save so far as modern art and appliances have been brought to bear in their construction. The aqueducts and baths of Rome may be pitted against the modern main drainage system, and there is nothing in either that could not be as well performed by the proficient architect as the professional engineer.

Formerly we find several instances of the professions of architect, engineer, painter, and sculptor being pursued by the one person; but, while good reason may be shewn for the distinct callings of painter and sculptor, no cogent reason can, we think, be adduced for the separation of architecture and engineering into two distinct callings. The one collegiate or technical training can be made sufficient for the practice of both. Many of the old architects were proficient engineers, and we do not even require proof of the fact by consulting their writings, for their still existing works prove it. Yea, they were military as well as civil engineers, and several of them we find were engaged on works of fortification and defence, and in the construction of military machines. Vitruvius was so employed, and his practice embraced pumping engines and other appliances for agricultural and commercial purposes. The old architects were also great bridge builders, and, considering the times in which they lived, some of their works would put to shame many of our modern practitioners.

Coming down to the middle ages, we find some splendid examples of both professions being combined in the same person.

The architect Brunelleschi, the sculptor and artist Michael Angelo, the painter Leonardi da Vinci—each and all have shown their talents in engineering as well as architectural practice, in the construction of fortifications and canals and aqueducts for the conveyance of water to different levels. Nor should we pass over the names of Leon Baptista Alberti, Andrea Palladio, Scamozzi, and Sebastin Serlio, and others who were engineers as well as architects. William of Wykeham, and Peter of Colechurch, the builders of old London Bridge, may also be instanced as men who combined both professions, and left works after them that survived for centuries. The sixteenth century produced Albert Dürer, the painter and engraver, who has also shown his talent on fortifications. At the same period in Italy and Holland architects proved their engineering capacity in constructing breast-works to resist the encroachments of the sea, constructing canals for the conveyance of merchandise, and reclaiming waste lands by drainage operations. Among the military engineers, bridge builders, and architects of the 17th and 18th centuries abroad, the most prominent were Errard de Bar, le Duc, De Ville, Pagan, Vauban, Coehorn, Cormontaigne, and Belidor. The last was an able engineer, architect, and bridge builder. Our readers will remember his name in connection with the Diary of George Sempie, the Dublin architect and builder of old Essex Bridge.

Sir Christopher Wren, the celebrated English architect, whose practice we find extended to Ireland, acted as a civil engineer, and leaving behind him so many proofs of his ability, who will say that he could not shine as an engineer as well as an architect? Towards the close of the last century in Dublin, James Gandon, the architect of the Custom House, Carlisle Bridge, and other works, showed his ability in engineering. Vallancy, the antiquarian, though not a professional architect, being originally in the engineer corps of the 12th regiment, proved that he could design structures and carry out engineering works with credit. Besides his Irish antiquarian works, he published the "Field Engineer" and a "Treatise on Stone Cutting."

Of modern engineers in England as a profession, the first military corps was the Royal Engineers, formed in 1787, but Brindley and others previous to this, were engaged in canal construction. The Society of Civil Engineers owes its origin to Smeaton and a few others in 1793, first called the Smeatonian Society, and in 1818 the Institution was established, and incorporated by royal charter a few years after. The names and works of Watt, Telford, Lock, Stephenson, Rennie, Brunels, and some more recent are too well known.

Putting aside naval architecture and the making of machines as special business, we are of opinion that the profession of the civil engineer and the architect ought to be a joint one, and combined in the one person. The railway system of these countries is nearly used up, canal construction has ceased, but there is still a large field for drainage operations, sewerage projects,—in a word, sanitary engineering and all its concomitants and surroundings. It does not, however, require a distinct profession for this kind of work, which could be as efficiently performed by an experienced architect as by an engineer.

The man that can plan a house well in all its parts, and properly contrive all that belongs to its drainage, warming, water supply, and ventilation, can also plan and carry out the sewerage of a city, or the drainage area of a county. Architecture and engineering are based on mechanical principles, but beauty and harmony should be associated with the latter as well as the former. An iron bridge or an iron building is as capable of artistic treatment as one of stone or other material. Art can be combined with strength, and science with both, and there is no more reason for divorcing either, than there has been shown for the separation of architects and engineers into two distinct professions, which after all are not really distinct, nor are likely to always remain.

THE DEVELOPMENT OF OUR TURF INDUSTRY.

FOURTH ARTICLE.

SINCE we commenced these articles, the peat question has been once more taken up and discussed by some of our English daily and weekly professional contemporaries. The *Globe* newspaper a few days ago, in noticing the subject, stated that peat coal has been lately tried in the engine fires of steamships, and has been found an excellent substitute for pit coal. Its almost smokeless qualities, as well as the small amount of ash to the quantity consumed, was one of its best recommendations. The experiment, however, of using peat in river steamers was tried, as we believe we have already stated, upwards of thirty years ago on the Shannon, so its value has long since been proven. There is no doubt that, with a properly-constructed furnace, very little more compressed peat would be required to produce the same steam power than is now consumed of pit coal.

In summarising the several mechanical systems of importance mentioned in our last paper, Mr. Meadows arrives at the following conclusions:—

"1st. That the main object sought to be obtained in all the systems, taken as a whole, consists in increasing the density of the peat, so as to present in a smaller space, and consequently in a more effective condition, the quantity of heat already possessed by any given weight of peat. But there is not any made to the original quantity of heat, inasmuch as there is neither any addition made to the peat itself nor any element unfavourable to the development or generation of heat withdrawn from it, in the process of manufacture.

"2nd. That the value of all such systems is, therefore, proportionate to the need that exists for effecting density, and that this value is variable, according as peat in the natural condition is capable of yielding a more or less dense fuel, without requiring any mechanical treatment for the purpose. In other words, that while it would be desirable to subject peat in which the fibrous structure exists to an extent unfavourable to density, to one or other of these mechanical processes, for its improvement, any such treatment would be practically of little or no use for peat which, when cut in the usual way, will give a fairly dense turf, without the aid of mechanical systems.

"3rd. That the several systems of manufacture resolve themselves into two classes, as follows:—

"Compressed Turf—in which the desired

density is given to peat, when in the condition of fine dry turf mould, by the direct action of mechanical force or pressure—as done at Derrylea, near Monasterevan, upon the system known as ‘Exeter’s’; and Dense Turf—in which the density is obtained by tearing and mixing the raw peat in its wet condition, so as to break up the fibrous structure and reduce the whole to a mass of pulp. In this state, peat offers itself under the most favourable condition for becoming dense, with the additional advantage of drying more speedily than it would if simply cut as ordinary turf.”

“Exeter’s” system, as we have already seen, involves a large outlay and consequent liabilities, making its production a matter of considerable expense, and therefore restricting the extent of its use in many ways. The principle of compression is, therefore, as yet a not very advantageous one; still we may hope for improvements in the system, by which density can be obtained at a considerably less expense. The principle of making dense turf by tearing and mixing has led to a variety of systems, but the capacity of the machines in each case is somewhat limited; and if a large supply is required, an increase of machines is necessary. A combination of both mechanical systems at the present time is, we think, desirable; on no account ought the ordinary production of peat be given up, but, on the contrary, more and more energetically practised.

We have sufficient material and sufficient labour in the country to create and develop a special industry, highly remunerative, without subordination to any other form of labour. In France, the manufacture of peat is mostly confined to that variety known as marsh peat, which lies under water. Dredging is resorted to in some stages of the work, but there are implements designed specially for the work; one of these is used by the workmen, but when a larger supply is required a mechanical arrangement is substituted. The implement for hand labour is known as the “grand louchet,” a box-shaped tool constructed of wrought iron bars, or otherwise of sheet-iron perforated with holes, attached to a light iron frame, about 4 ft. 3 in. open at the top and bottom as well as in front, and in width and depth from 4 in. to 5 in. square. This is simply a long, narrow, shallow, two-sided box, open at either end and in the front. The implement is provided with a socket riveted to the under part; fitted with a round wooden handle from 20 to 25 ft. long. In using this tool, it is held as upright as possible by the workman, who severs the peat from the mass lying below the water. As each prism-shaped piece of peat is raised, it is either divided into portions of about equal lengths, to be dried as ordinary sods of turf, or the entire is subjected to a mixing operation with shovels or wooden rakes, and is afterwards moulded by hand in wooden moulds. The moulds are of light timber, and commonly comprise four divisions, by which four pieces of peat are formed at a time, of about 18 in. long and from 8 to 8½ in. in width and thickness. When dry, these pieces of dense turf are reduced to about one-fifth or more of their original size.

The second or mechanical arrangement is named the “louchet mécanique,” which is upon a much larger scale than the former. This is mounted upon a wooden frame-work fitted with a rack and wheel movement for the up and down motion of the cutting box.

The latter is provided with a pair of hinged valves in the bottom, opening upwards, which close and retain the piece of peat when it is raised. It is stated that the labour of raising peat by this method is very light, as the peat moves in water of about the same weight with itself, and the continuous upward motion of the machine brings the peat over the water, when it is cut out of the “louchet” by a workman who stands in a flat-bottomed boat in front of the implement.

The mass of peat thus obtained is then carried to the working floors, moulded into forms or “briquettes” of dense turf. Peat thus obtained is in some cases subjected to a mechanical tearing and mixing process, effected by cylinders or rollers filled with short blades driven by moderate steam power. The pulp in some instances is distributed in pieces upon the drying ground by a mechanical moulding and drying machine, drawn by one workman, with another walking beside the machine, giving motion to its internal arrangements for delivering the peat in its moulded condition as it travels over the ground. With this machine two workmen are capable of moulding and distributing upon the drying ground from forty to fifty thousand pieces of peat in a full working day. The cost of production of dense turf by the “louchet mécanique” is estimated at from 6s. to 7s. or 8s. per ton.

The French implement for cutting turf in the ordinary manner, where the bog is freed from water by drainage, is termed “louchet ordinaire.” This is simply a French turf-cutter’s stand with a blade from 12 in. to 18 in. long by 3½ in. wide, with the usual wing. The cost of labour production of this ordinary turf in France, inclusive of stacking and thatching upon the bog, is about 3s. 6d. to 4s. per ton. A great quantity of the dense turf produced in France is converted into charcoal for domestic and other wants. Charcoal produced in 1872 from dense turf of the Ourcq Valley was sold by retail in Paris at about 6s. per cwt. When produced from turf by any system of mixing and moulding peat, the charcoal is of a firm character. The price of coal from the Chaleroi and Mons districts was at the above periods about £2 10s. per ton. These facts are worthy of consideration. To make one ton of round marketable charcoal, from three to four tons of dense turf are required. Any fine portion made in the charring or transport is used in combination with firewood, charcoal, and powdered coke, and some tar for the manufacture of small artificial fuel known as “Charbon de Paris.” Here we see that the whole of the material is turned into profitable account.

In respect to the drying of turf, the air, wind, and the sun are the principal agents. In the production of ordinary turf, the weather, of course, must be taken advantage of. Here in Ireland all the fine weather is monopolised for harvest operations, because the industry is subordinated to farm labour. If the production of turf is to be made a special native industry, it must be prosecuted with earnestness. It is nearly fifty years since an extensive tract of undrained bog upon the Shannon, within a few miles of Limerick, became the scene of busy labour: difficulties were seen and overcome, piers for boats were built, and from the river a canal was cut into bog, and branches were extended through it for drainage and transport. Some two to three hundred persons in the season were to be seen at work. This

undertaking was begun by the proprietors of a distillery in Limerick. The turf cutting was for a while systematically prosecuted, and a gradual reclamation of valuable land was obtained. Speaking of this enterprise Mr. Meadows writes:—

“About the year 1842 the distillery works were discontinued by the proprietors, and the bog property passed into the hands of the late Mr. James M’Nab, who from the first had conducted its management, and from the year 1842 up to the present the raising of turf for sale to the public, coupled with the reclamation of the bog, has been followed there as a special business. The cutting commences usually in the month of March, and is continued to August, and the quantity made and disposed of in the condition of ordinary cut turf is of late years about five thousand tons annually.

“The writer examined these works, and has been assured by their present proprietor, Mr. Alexander M’Nab, that in no year has unfavourable weather prevented the safe harvesting of the turf, in evidence of which he referred to the fact, that notwithstanding the wetness of the summer and autumn of 1872, the quantity of the turf cut by him, about five thousand tons, was all saved in good condition, and disposed of to the public a month or two before the end of the year.

“A tract of about fifty statute acres of the cut-away bog has been reclaimed into excellent pasturage for cattle, and now realizes a rent of £82 annually; and a further quantity of nearly fifty statute acres is in process of reclamation. Around the house and offices there are about eighty acres under grass and tillage, with fences interspersed with shrub and hedge-row trees; and as an illustration in Ireland of the spirit which elsewhere upon a large scale converts morasses into money, and in their place installs Mona Lodge—for so that once old waste by the Shannon is now called—may be referred to as well with credit to its energetic owner, as with advantage to all who can take a lesson from such useful industry.”

We can with pleasure commend Mr. Meadows’ observations here, and we hope there will be many, very many, imitators. In the above instance the turf is, for the most part, cut and saved at contract prices with the workman, and it was sold last year at rates equal to about 6s. 6d. per ton. The amount included the proprietor’s profit and return from the work. If ordinary turf can be procured in other places at the same outlay and return, it can be sold at the place of production with advantage. The artificial drying of turf as yet has not been quite successful. According to Mr. Meadows, “in its ordinary and dried condition we have usually in turf from 25 to 80 per cent. of water in the state of diffused moisture, and by artificial drying this quantity may be reduced to 10 per cent.” But next comes the statement that very soon afterwards “peat thus dried when exposed to the air will re-absorb moisture until it contains upon an average from 18 to 20 per cent. of water, which may be looked upon as the lowest point in respect to water, and the highest point in respect of dryness to which either dense turf or ordinary dry turf in their best and dried condition are capable of being brought in open air, but which in practice is not always obtained.” A doubt is likely to be thrown upon Mr. Meadows’ statement in respect to the degree of re-absorption alluded to. A stone will absorb moisture as well as

a sod of turf, and, whether air-seasoned or artificially-seasoned, a piece of timber will do the same; but turf or timber intended for fuel, whether air-dried or artificially-dried, need not be exposed in such a manner as to unavoidably re-absorb a large degree of moisture. When dried artificially or otherwise, turf can be well stacked or stored, and its dryness preserved.

An evaporative power is claimed for manufactured turf greater than ordinary turf, weight for weight, but Mr. Meadows is of opinion that the essential conditions of their being both not only of the same quality of peat but both in the same state of dryness, are not always stated. He says it has been ascertained that "a difference of 15 per cent. of moisture will effect the heating results to the extent of nearly one-half. A given weight of dense turf, as made by manufacture, will, in a smaller space, evaporate water more rapidly than the other, may be conceded as the natural results of its density; but we should expect the same weight of ordinary turf of the same quality and in the same state of dryness, although less dense than the former, to evaporate an equal quantity of water under the same conditions, although not in the same space of time. If this be not so, then we have to ask ourselves by what means has the mere increase of density become in itself a source of additional actual heat in addition to the quantity already contained in the fuel, the weights and all other conditions, except that of density alone, being the same in both."

We quite agree with Mr. Meadows in believing that a full and plain exposition of this part of the subject, free from all technicalities, is absolutely necessary before we can arrive at a satisfactory comprehension of the peat question in connection with improved fuel manufacture. Intensity of heat and economy of space are matters worthy of consideration; and if improved mechanical processes in cutting, compressing and drying will develop this industry, and give us cheap fuel, we will hail the advent of all such improvements.

One industry will beget another. With the production of turf by improved mechanical systems will come the production of oils and paraffin, and other substances. By employing turf for iron making and steam driving uses, it will become an agent in reclaiming the vast bogs that it at present occupies or constitutes, and transforming them into smiling gardens and harvest fields for the pleasure and sustenance of man.

Supplementary to what we have already written on our turf industry, we may in our next issue draw attention to some technical works written upon the origin, varieties, and chemical characters of peat, and its uses in agricultural and other directions. We again commend Mr. Meadows' little work to the careful study of our countrymen.

THE CRYSTAL PALACE SCHOOL OF ART.

THIS school of art, of which we spoke at length some months ago, appears to be progressing well. The summer term has now closed. No fewer than 800 lady students attended the art classes during the last term, and on Saturday the certificates were distributed to the students of the practical engineering classes. These classes were established by the directors of the Palace Company at the beginning of the year, in connection with the other departments of the Art and Science School, for the purpose of

affording to students of civil and mechanical engineering the advantages of thorough practical instruction in the rudiments of either profession and in the manipulation of materials. These classes are also available for gentlemen anxious to study engineering, drawing, or to compete for the Whitworth Scholarships, or to enter the Steam Mercantile Marine. The want of such an institution, with facilities for practical instruction to the pupils of engineers, has long been felt, as a preparatory course such as to be obtained at the Palace renders engineering pupils at once useful to their employers and better able to avail themselves of their opportunities during the time they are articulated. There is scarcely any position in England more suitable than the Palace for the purposes of these classes, as it contains so many engineering models, works of science and art, hydraulic, pumping, and other machinery, which serve as capital illustrations of important engineering works. Mr. J. W. Wilson, an associate of the Institute of Civil Engineers, presides over these classes as principal, and three storeys of the south tower of the Palace have been fitted up as lecture rooms, drawing offices, and pattern shop and foundry, and a smith's fitting and erecting shops. The students are engaged in mechanical drawing, estimating, and calculating, pattern making, and constructing machinery for the market. These departments were inspected on Saturday by the visitors, and the drawings and machinery were examined with great interest.

Mr. Charles Hutton Gregory, F.R.G.S., Past President Inst. C.E., presided at the distribution of certificates, and he was supported by Mr. Thomas Hughes, M.P., Mr. F. K. J. Shenton, (superintendent of the School of Art, Science, and Literature), the principal, and other gentlemen. Messrs. Latimer Clark, M.I.C.E., and Chas. Douglas Fox, M.I.C.E., the examiners in the recent examinations, say in the report which they sent in, "We have to express the high satisfaction we have felt in conducting this examination. A good proportion of the students have shown a thoughtful appreciation of their work, and some of them deserve high commendation. The work in the drawing office is especially good."

THE CITY BASINS AND THE CORPORATION.

A CLEAR duty is before the Corporation which they are called upon to perform, but they have met it with their usual characteristics. The promoters of the project of converting the city basins into baths should not relax their efforts or allow the question to be shelved under any pretence.

On Saturday last, at one o'clock, the Citizens' Committee, by deputation consisting of Frederick W. Pim, Esq.; Dr. O'Leary, and Andrew English, secretary, and the Mechanics' Institute, represented by Messrs. John Flood and Edward O'Brien, waited upon No. 1 Committee.

Mr. Pim, in introducing the deputation, stated briefly the objects sought to be achieved by the citizens, and hoped that the opportunity then presented for benefiting the people by the erection of baths would be availed of as early as possible by the Corporation of Dublin.

Mr. Byrne, on behalf of Committee No. 1, stated that they could not buy the basins without the money, and he asked Mr. Pim where would the money come from. The only way would be to ask the citizens to submit to increased taxation.

Dr. O'Leary would not ask for any such thing; he asked the Corporation to establish baths. Had they the money to spare? The Waterworks Committee said they had power to borrow £100,000.

Mr. Byrne said they had borrowed a portion, and would borrow £75,000 more if they could get it on the security of the Borough Fund.

Dr. O'Leary said if £5,000 were got for the basins, interest on that sum would amount only to £175 per annum, which would not amount to more than one-tenth of a penny in the pound on the valuation.

Mr. Byrne said the Improvement Rate was £4,000 deficient. If basins were granted as required there would be a further deficit of £175.

Mr. Pim suggested that the Corporation engineer should inspect the basins, and report on the pro-

bability of their being converted into self-supporting baths.

Mr. Byrne said that if the project was likely to prove successful it ought to be taken up by private enterprise. Why should a public corporation go into it?

Mr. Pim stated that, as a Corporation, they should take care of the health of the citizens; that they were bound by Act of Parliament to provide baths for the people.

Mr. Byrne, in reply, said that the act was not mandatory in that respect.

Dr. O'Leary said that £30,000 might have to be expended in providing baths if the basins were not utilized for that purpose.

Mr. Andrew English read extracts from English letters and newspapers showing that municipalities in England were at that moment engaged in complying with the wishes of the people.

Aldermen O'Rourke and Draper, the chairman, and several other members, expressed their desire to comply with the wish of the deputation did funds permit, and that they would support an application to the Council to let the tenders stand over—six months if necessary—until the citizens should propound a feasible scheme for carrying out their desirable object.

If a few of the useless and unnecessary staff of the Corporation were cashiered, and the income and emoluments of a few others were subjected to a revision, there would soon be found plenty of money to establish public baths without increasing the taxation of the city. Let it be also understood that law-costs are still accumulating, expended for purposes that will never confer the least benefit upon our citizens. We are given to understand also that the Corporation of Dublin will figure in the next session of Parliament, to the great delight of the lawyers, their solicitors, agents, and sub-agents, both here and in London.

THE ARCHEOLOGICAL CONGRESS AT EXETER.

THE congress of the Archæological Institute at Exeter was productive of many interesting papers and several useful as well as pleasant excursions and examinations. The president's address (the Earl of Devon) was worthy of praise, and at the close of the congress Lord Talbot de Malahide paid tribute to the president not only for his address but his hospitality and the many obligations the institute was under to his lordship.

Among the papers read were—"Worthies of Devonshire," by Mr. G. J. Clarke; "The Place of Exeter in the History of England," by Mr. E. Freeman; "On the Hut Circles of the South Side of Dartmoor," by Mr. Ormerod; Mr. Scharf discoursed on a collection of portraits of famous personages in the west of England, among which was a series of portraits of mayors of different periods; Archdeacon Freeman described the old cathedral; and Mr. J. H. Parker headed an excursion through the town, describing the several objects of interest with his well-known ability.

BLACKROCK TOWNSHIP.

At an ordinary meeting of the Commissioners of the Blackrock Township, on Wednesday, the principal business was with reference to the main drainage question of the township, the plans and specifications for which were submitted by the surveyor, and a report on the subject from the Main Drainage Committee read. The report and plans with reference to certain sewerage works from Stradbroke-road to the high road were adopted. With regard to the main portion of the sewerage system alluded to in the committee's report, it was advised that the plans should be subjected to certain modifications so far as they alluded to the system from the Stradbroke-road to Thornhill Lodge, Monkstown, and that all existing sewers now discharging into the stream should be conducted by branch pipes, so that no sewage should be carried into its present passage, the revised plans to be laid before the next meeting of the board. The recommendations of the committee were adopted, and directions given for the insertion of advertisements for contractors to carry out the works.

FURTHER MEMORIALS OF OLD ESSEX, ORMOND, AND OTHER BRIDGES.

[Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

For several years subsequent to the erection of old Essex Bridge, the re-building of the other bridges that spanned the Liffey was agitated. Both Arran Bridge (now Queen's Bridge), the Old Bridge (now Whitworth Bridge), Ormond Bridge (now Richmond Bridge), and Bloody Bridge (subsequently styled Barrack Bridge, until its recent displacement by an iron one called Victoria Bridge), were all in a state of dilapidation, and continually undergoing repair, occasioned by the failures in their foundations. For several centuries the only bridge that spanned the Liffey was the Old Bridge, rebuilt by the Dominican Friars in 1428, who charged 1d. toll for carriages and beasts of burden. The original Old or Dublin Bridge was constructed of timber in 1215, pursuant to a licence granted to the City by King John. In 1385 this bridge fell or was swept away by the floods. In 1671 "Bloody Bridge" was first constructed of timber, but was replaced by a stone one some years after. An attempt being made to break the first bridge down, on the part, it is said, of some of the Dublin apprentices, led to a serious disturbance, in which four persons were killed: hence the name.

Arran Bridge was erected in 1684, and Ormond (stone) Bridge in the same year. Two years previous, however, Sir Humphrey Jarvis constructed the original Ormond Bridge of timber, which only lasted for two years. The Corporation of Dublin began the re-building immediately after, and the second bridge was swept away by a flood and replaced by the present Richmond Bridge, which was opened on Patrick's Day, 1816, being upwards of two years in course of erection. Whitworth Bridge, which replaced the Old Bridge, was commenced in 1816, and Queen's Bridge, which replaced Arran Bridge, was finished in 1768, having taken nearly four years in re-building. This last bridge was erected under the inspection, and, we believe, from the design of General Vallancy, the noted antiquarian, then a director in the Ordnance Department of Dublin.

King's Bridge was commenced in 1827, to commemorate the visit of George IV, to Dublin in 1821. The Metal (toll) Bridge was erected in 1816, and Sarah Bridge, i.e., Island Bridge, was commenced in 1790, and named after Sarah Countess of Westmoreland, the wife of the then Viceroy. This distinguished lady died in November, 1783, while residing at the Viceregal Lodge, of malarial fever, in the 82nd year of her age. She was the only daughter of Robert Child, of Osterley in Middlesex, a very wealthy citizen of London. Her father opposed her marriage with the Earl, and, it having taken place without his consent, he devised his immense property, which appeared to be personal, so that it could not devolve to the heir of his son-in-law's title. The fortune consequently fell to the daughter of the issue. In an obituary of the death of the Countess of Westmoreland in the *Anthologia Hibernica* in 1798, we find the following:—"The Earl of Westmoreland is at Rathfarnham Castle with Lord Loftus, and the Viceregal children are at the Solicitor-General's house in Cabragh. The Countess of Westmoreland is the second Lord Lieutenant's consort, in our recollection, who paid the debt of nature in this Kingdom, the first being Lady Ferrars, consort to Lord Viscount Townsend, who died in Leixlip Castle, county Kildare, on the 14th September, 1770, whose remains, after lying in state in Dublin Castle were conveyed to the water-side with funeral honours."

Twenty years after the re-building of old Essex Bridge, namely, in 1775—the year

previous to which Semple published his treatise on "Building in Water"—he writes thus:—

"THE ARCHITECT'S CONFIDENCE IN HIS WORK."

"This last winter has been very remarkable for exceeding high land floods in this river, but particularly one that came suddenly down from the mountains on the last day of January, 1775, with such violence that it broke the moorings and carried off eight gabbards from the coal quay; five of them were stopped for some days by Essex Bridge, and three of them carried directly down the river. One of these five lodged against the sterlings of the middle piers, and the flood continuing very violent ten succeeding days, it was quite impossible to get her off. As my young readers may, perhaps, not be acquainted with the natural effect of such an obstruction, it is necessary to observe that shoals or sharps in navigable rivers have frequently been deepened and carried off by lodging loaded gabbards quite across them, because they stop the current at the surface and press powerfully on the water at the bottom, which consequently increases the strength and velocity thereof, and so break up and carry off the bed of the river in such places. But I shall give a recent and more familiar instance. About ten years ago a rapid land flood broke the moorings of a raft of timber at the Barrack Slip, and carried it down to Queen's Bridge, where it unluckily lodged quite across the middle arch. The piers of this bridge were built on the surface of the bed of the river, as most of the former bridges were. This raft of timber obstructing the current of the surface, in like manner increased the power of it at the bottom, and within the space of a few days totally demolished the bridge. But to proceed [*in re Essex Bridge*]. During the ten days that this gabbard lodged against the sterlings of the middle pier I felt not the least perturbation, but on the contrary I found my heart exult with inexpressible pleasure, being thoroughly convinced that if all the arches were stopped up in like manner for many successive years that they would have no more effect on that foundation than if it were a solid rock. However, after the flood had fallen, curiosity induced me to examine the effects of it, and I really was surprised to find that even the first stratum of the covering which we laid over the foundations was not in the least degree molested. Indeed the upper parts of the covering were by that and former floods mostly washed away, yet the mortar on the surface of it is by this time so effectually cemented that the current passing over it could not make the least impression on it, and the red fir dovetailed piles that case and enclose it down to the rock (being in water) will most assuredly last firm and sound for numerous generations to come, and in the interval the masonry will, in reasonable time, cement to such a degree as if the mortar and grout of the whole were actually petrified, and even so as to put it out of the power of time to destroy it.

"For these reasons I most earnestly recommend it to you to do all in your power to make thorough foundations in like manner quite across such rivers as you may happen to be employed in, that you may enjoy the like tranquil state of mind during the remainder of your life which I experienced when I saw the gabbard lie across that arch."

[Alas! there are but few in these days that build for posterity, or even for the lifetime of their cotemporaries. Competition and the contract system, in building matters at least, has not been productive of that honourable action and feeling that might be expected. The emulation and ambition of this last half of the nineteenth century is to make money, instead of establishing a character.]

CONCERNING ORMOND BRIDGE.

"In April, 1752, this bridge was in the utmost danger of sharing the same fate that Essex Bridge had so lately met with, on which my brother John and I were ordered to go and examine it, which accordingly we

did, and we found the south pier at a [first pier on south side] had greatly failed. The bed of the river on which it had stood was washed away and the first course of the stone work also for about 7 feet under the pier, and part of the second course and that part of the river had no support but the strength of the water and the bond of the work. This discovery induced us to examine the true cause thereof, in order to determine on the methods for repairing it, which we could not effectually do without boring the bed of the river to find out what ground it was built upon; and having at that time made some correct soundings and borings and otherwise very strictly examined it, and having now the draft, soundings, and borings thereof by me, I do apprehend that within some very short time it must inevitably fall; and as I am now so healthful as to be able to reconsider them, it may be of use to the public in general, and to the Corporation of this hon. city in particular, to form such a design for the re-building of the same as shall appear the most eligible.

[Semple sunk a coffer-dam, enclosing the damaged pier, and underpinned the west end of it. He found that there was nothing supporting the upper work but the bond of the stones and the strength of the mortar. Unlike the piers of Essex Bridge which he removed, the piers of Ormond Bridge had no frames of wood planked at the bottom or around them, but the bottom courses were apparently laid on the naked bed of the river. Some of them had sunk to eastwards and others to the west, particularly the northern pier. The borings shew that piling was indispensable, for between the bed of the river and the rock there was little else but exceedingly soft blue clay or mud, a few of the borings only exhibiting some loose gravel or sandy loam. Semple furnishes lines of a design for Ormond Bridge, with instructions for its proper execution, leaving to those who came after him the working out of the decorative details. His design for Ormond Bridge gives the same number of arches as his Essex Bridge one, and, as compared with old Ormond Bridge, the thickness of the piers in Semple's design is decreased, while the arches or water-way is considerably enlarged. The carriage-way or breadth of the intended bridge is also several feet wider. Semple's design for Ormond Bridge was not carried out, but the hints he gave were availed of in the re-building of Richmond Bridge. His prognostications respecting the failure and certain fall of Ormond Bridge took place, though not quite so soon as might have been expected. By a system of patch-work, old Ormond Bridge was kept together until the end of the first decade of the present century. Shortly after a flood swept it down the river. Richmond Bridge, which replaces it, is one of three arches, with a balustrade of cast iron, and is stated to be 220 ft. long by 52 ft. wide. The keystones on either side are emblematical of Peace, Hibernia, and Commerce, on one side, and Plenty, the River Liffey, and Industry, on the other. It was completed at an expense of £25,000, raised by presentments on the city and county. The first stone of Whitworth Bridge was laid by the viceroy of that name; it is also one of three arches. Carlisle Bridge was designed by James Gandon, and was completed in 1794-5. It is about 210 ft. in length by 48 ft. in width, and when first erected was considered a very handsome bridge. Its opening led to considerable improvements north and south of the Liffey. Before its construction, Sackville-street, or the Mall, was nearly altogether a private street, and the residence of several of the nobility. It gradually, however, after the Union, became more of a business thoroughfare, and the lower portion near to the bridge was transformed into shops. There are many incidents worthy of extended notice connected with the origin and history of the bridges over the Liffey, particularly the Old Bridge, Ormond, Essex, and Carlisle bridges. The first Ormond was a timber one, and it and the first Essex Bridge (which was of stone) were both built by Humphrey

Jervis, who was afterwards lord mayor, and knighted in the viceroyalty of Arthur Earl of Essex. As we before stated in one of our notices, the stones of St. Mary's Abbey were used in the construction of the first Essex Bridge in 1676. Ill luck seems to have overtaken the undertakers. Sir Humphrey, the founder, was confined for several years in gaol; and the master mason, Robert Mack, who executed the work, was a considerable loser by a mistake in the contract, added to several other accidents. Had it not been for his good credit, he might have suffered a similar fate to that of Sir Humphrey Jervis.]

EXETER CATHEDRAL.

FOR a considerable time past Sir Gilbert Scott and his assistants have been exercising their peculiar abilities on a perilous task connected with one of the most interesting and least injured of English cathedrals,—a structure which, in the eyes of the artist, has hardly an equal, inasmuch as it possesses more admirable sculpture, in an untouched condition, than any work of its class. We all know what has befallen Lincoln; of Wells it is best to say as little as can be said; but Exeter Cathedral has no superior, so far as regards the absolutely perfect corbels of the choir, the decorative carving on some of the tombs, especially that of Bishop Marshall, a master-piece of pure design, and, above all, its crowning glory, the effigies in the west front. There is nothing of greater importance in the country. When those who think of these matters, and believe they understand the inestimable value of such structures, learnt that the dean and chapter of Exeter were preaching a sort of crusade through the West, in order to gather funds for the "restoration" of their cathedral, they felt great alarm, alarm not by any means allayed by the further news that Sir G. Scott and his band of restorers were entrusted with another work, to be added to those which they have already performed with anything but uniform success, and which have hardly left as a cathedral in anything like the condition to which Time had brought it. It was to be expected that discoveries would be made of the "alarming condition of certain parts of the fabric," which would show beyond a question how lucky a thing it was that the great restorer had been called in just in the nick of time. A report did, indeed, reach us, that the rest of many old ladies in the Close at Exeter had been broken by fears of what would happen if the enormous Norman towers should suddenly cave in in the middle of the night, and before the restoring, securing hands of Sir Gilbert and his men had done what was alleged to be urgently needful. No one who has experience of these matters troubled himself about these reports: they always precede and accompany a "restoration." They may be grounded on the chosen "restorer's" own assertions, or they may not; they may even be true in themselves.

It is one sign of the prodigious wealth of this country that enormous sums, in the aggregate far beyond what people believe, have been spent in changing nearly every ancient cathedral in this land into a new one,—obliterating with merciless hands and blind hearts all memorials of service, all signs of wear; scraping out every mark, stain, slur, or blot, notwithstanding their innumerable associations,—re-writing the signature of antiquity, till it becomes a mark of little beauty and of no venerableness. The shattered remains are now no better than new; carvings, mouldings, statues, all have undergone the restorer's chisel or brush; some are none the worse for the operation, a few, a very few, are all the better; but, immeasurably, the larger portion of these relics, too often the sole legacies of the arts of our country belonging to periods when art really flourished amongst us, has utterly perished, or is worse than destroyed, for they have been sophisticated, to say nothing of their being mixed with work which, when the memories of pure old sculpture are lost, is just good enough to be mistaken for that which it is not, and by no possibility could become.

That deans and chapters, ignorant of all this, and indifferent to art, should be apt to believe the assertions of those on whom they rely, is not wonderful. Nor is it wonderful that, having certain rather wearisome duties, essentially of a mechanical kind, to perform in their churches, the cathedral clergy should like to have the scene of their labours put into a clean, neat, and "handsome" condition. To preach a crusade for funds is, in itself, a most seductive and delightful pastime, exquisitely exhilarating to minds bored by the tedium of "residence," or even greater tedium of "non-residence." It is generally new-comers who act like the pro-

verbial new brooms. Alas! a new dean has too often meant a new cathedral.

Above all, more powerful than that craving for activity from which even the "superior clergy" are not entirely exempt, is the good, old English, housewifely passion for neatness and "tidiness," to say nothing of the desirability of getting the churches, in which one may spend one's life, put in thorough repair by means of funds, a large proportion of which are gathered out of other people's pockets. These and an amateurish liking for dabbling in ecclesiology and architecture are the main-springs of that mania which has seized deans and chapters throughout the land,—a mania which has destroyed everything venerable in every place it has touched. Of this activity the current works at Exeter are the latest examples,—an activity which has had nothing to do with love for architecture, still less for Gothic architecture; for, as to the latter, it is remarkable that, now that nearly every building in that style is "restored," the labourer's hands have attacked those of Renaissance, and Wren's buildings themselves, although by no means in peril of falling, have to take their turn. As to love for Gothic architecture, it is utterly inconceivable that any one who knows what he is about could resolve to "restore" or "renovate" an ancient building in that style, which, of all others, expresses most perfectly the mind and heart of those who practised it; so purely idiosyncratic is Gothic design. Would that the superior clergy had something else to do. It was a day as woeful for English history, for with that our cathedrals were intimately connected, as for English art when the clergy were left to the proverbial work of idle hands.

We prefer to speak of the "renovation" of Exeter Cathedral, rather than describe the works we carefully examined the other day as "restorations," which they are not, in the opprobrious sense of that term, at least. If we said that this great church has been "destroyed," it would be true, from the point of view of the antiquary or the historian, or of those who have pathetic associations with the building as the house of prayer, for many generations, of their forerunners, the tomb-house of the ancestors of some of them. There is an end of all that charmed such persons. Except the nave, and that, doubtless, for a time only, the interior of Exeter Cathedral is as good as new. Indeed, it is beyond doubt that it never looked half so nice as at the present moment. Yet, when the scaffolding has been removed from the transepts, the requisite amount of tinting imparted to the old and new carvings, the new stalls set up in the choir, and the last smart new tile has been placed in the pavement, we see no reason to doubt the outburst of a chorus of praise in all the West, from Morthoe to the Lizard, from the Thames to the Channel.

There are, however, two crumbs of comfort for the lovers of antiquity and artists. It is not considered possible to restore or "touch" the incomparable sculptures of the west front,—now that those of Wells have been "restored," and those of Lincoln are destroyed, the most precious remnant of the kind in England. The operation of tinting is to be performed with discretion; and we are bound to say that the specimens have been by no means badly or vulgarly done. But we deny that it needed or ought to have been done, and shall not cease to lament that it has been attempted.

Whether it is desirable to turn an old cathedral into a new one, is a question upon which we need not give our opinion. There is now no first-class cathedral left to be meddled with, and Westminster Abbey is the sole work of the kind which remains substantially unrenovated. We do sincerely trust that the Abbey chapter will control the iconoclastic zeal of their dean, and that the church may be allowed to remain as it is, if only that we may have a specimen of what churches were before the avatar of Sir G. Scott.

We have often fancied it a thoughtless saying that we ought to be grateful for the whitewashing propensities of our forefathers, because manifold coats of lime preserved innumerable sculptures. This is true only in a limited sense. It is far truer that the removal of whitewash has led not only to uncovering of many beauties, but to the repainting, "restoring," "renovating," "piercing out," and what not, of sculptures which were artistically and historically invaluable. Westminster Abbey seems to have been saved, at least for the present, from anything more than the slow piece-meal "restoration" it is undergoing, simply by the absence of whitewash.

We may add a few notes on the nature and extent of the disaster which has befallen the noblest church in the West of England. Ill done or well done, there is no denying that Sir G. Scott's labours have been thorough. The whole of the interior, east of the easternmost piers of the nave, i.e., about two-thirds of the structure, including the lady chapel,

the choir and its aisles, the chapels of St. Andrew, St. James, St. John, and St. Paul, with Speke's chantry, have been renovated in the most comprehensive sense of the term. Bishop Oldham's chantry was, as students know, "restored" with a vengeance some years ago, as a way of expressing the veneration felt for their pious benefactor by the members of Corpus Christi College, Oxford. The present works have involved the cleaning out of the mouldings of all kinds and parts, by washing and scraping the surfaces. As for the flat walls, the caps, corbels, vaulting shafts, ribs of the vaults, the vaults themselves, and pillars throughout, wherever there was a lost morsel, it has been replaced with a new piece of stone, which has been carved *in situ*, and the cunning expedient adopted of leaving the surface of the new work in a relatively rough state, so that it harmonizes not ill with the washed and scraped surface of the old stone. Tons of whitewash have, certainly with no bad result, been removed. If the work had stopped there, no one could object; but it is the putting in of new work among the old that is perilous, even if we place the most implicit faith in the assertion that no old work has been re-cut or "re-worked," and, if the assertion be not true, it is disastrous in its consequences. We are satisfied that the inestimable carvings of the corbels to the vaulting shafts of the choir are essentially intact, but we could not venture to say so much for the enrichments of the elaborately restored tomb ascribed to Bishop Chichester, on the north of the altar. Numbers of new pieces of stone have been dexterously fitted; wherever a fracture has occurred in a moulding, cap, crocket, or finial, these have been cleverly carved "to match" the old corresponding parts. The like has been done to the ceiling of the choir, while the ribs of the vaulting have been coloured and gilt, and the result is not agreeable. The superb bosses have been gilt and coloured with a great deal of delicacy and some tact. Nevertheless these sculptures resemble in a painful degree elaborately decorated gingerbread, or rather confectionery of a very fine kind. However this may be, it was a decided and serious mistake to cover the stone of the spaces of the vault between the ribs; instead of the bare and beautifully coloured stone, a dull, opaque salmon pigment has been applied here, seemingly on plaster.

At the east of the choir a new aumbrey, with canopy, shelf, and all, has taken the place of the wrecked old work, and there, just as if aumbries were coming into fashion again, it stands ready for use. The effigies on the tombs in the choir and lady chapel are, as yet at least, intact; but little bits of stone have been inserted in all parts of the screen of the doorway of the lady chapel, where the carving of the new cusps on the under side of the tracery over the door is of a rife, cast-iron fashion. The screen enclosing the choir proper on the north and south has been repaired and will probably be glazed.

All that remains of the old oak stalls in the choir is the miserere themselves; the canopies of the new work are very poor and commonplace in design, and, in execution, lean and crude, far inferior in spirit and vigorous freedom to the foliage on the canopy of the case of Loosemore's organ, a work of the last century. As to the stalls proper, their elbows and angles are enriched with sculptures in wood, having no merit which can justify their being placed near the very fine carvings of the misereres. They have a poor, common, and modern look, which is unfortunate, even when it does not provoke a smile, as in the case of the man's head covered with a helmet, which fits him as a dish-cover might; another, with a camail and hood, will hardly pass, whatever may be said for the odd, modern look of the heads in cowls and what not; in fact, it would be hardly possible to exceed the genteel feebleness of this part of the renovations. It was pre-eminently unwise on the part of the carver to risk his credit on a tetramorph which we noticed in the north-western angle of the stalls. The notion of putting the tetramorph there was a good one, but it was not, we think, original. This Exeter tetramorph has been fatuously designed. The bishop's throne has been cleaned, and pieced with new bits of oak wherever it had suffered.

We think it was an error to open to view the arches immediately behind the altar, but it was certainly a far more unfortunate error to introduce the petty, pretty, puny reredos, with its trumpery, soulless carvings. The imbecile designs of three subjects remind us of the art of the late Mr. Barraud, the popular artist of "charity" children. An Ascension, in a vesica, is about the feeblest thing we have seen since Mr. Barraud died. Is this production vouchsafed as a specimen of what the new "Victorian" Gothic is to be in style? There is no Gothic in the sculptures; and the Descent of the Holy Ghost is represented in one of the panels in a fashion which the mind of Mr. Barraud, even

in its flabbiest moments, never conceived. Alabaster, white marble, petty shiney little knobs of serpentine, and neat but weak foliage, fail to vitalize this foolish display of confectionery art. The grille behind it would not look bad in a boudoir.—*Athenæum*.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

GREAT LYING-INN STREET—(second visit).

DURING a short re-visit to this old sinuous but once flourishing locality, we were painfully struck with its altered appearance. It is the same with a street that once begins to decay as with a hard-working man who is getting old, and who has no dependence save what his labour brings him. Twenty years even make a great alteration in a man's looks who was accounted young and handsome at thirty, but the octogenarian must have lived a temperate life who can shew a straight back and supple limbs that will not fail him in a day's walk through the city. It is the mind that kills us more than the physical toil we undergo. Our memories, good and bad, are too many for most of us. Recollections crowd on recollections, griefs, enmities, baffled hopes, departed joys, regrets as to the past, misgivings as to the future, together with the pains and penalties of age—let us sink but once under the consciousness of our own helplessness, and we are undone. Exercise is as good for age as for youth, and we would like no better or more noble death than dying in harness fighting for the benefit of our own health and humanity.

The crowded thoroughfare is, however, not the place to muse too much, and we shall pass along. Alas! we find many quaint old nooks, ancient court-yards, and antique shop-fronts have disappeared right and left since our early days. Open spaces we once knew are no more; houses and names we once recognised we recognise no longer. The street is still a street, but its residents, save some few in the sere and yellow leaf, are strangers to us. The old red brick fronts are crumbling, the swallows and sparrows are chattering and twittering in the eaves, the bow windows, the circular fanlights, and the raised panelled doors have vanished; and the cosy wine vaults and oyster cellars in the basements are closed for ever. The Old Watch is a fading memory, though the picture flashes across our minds as we pass by the scene of his sluggish labours. Few there are about here with vivid recollections of the old "Charlie" snoring in his sentry-box while the bullies and amazons of Cole's-lane and Horseman's-row were marching off in triumph with his rattle and pole. If not asleep in reality, 'twas for the good of his soul that he should appear so, for resistance would only bring him into trouble, and that was a thing the laws of self-preservation told him to plainly avoid. The homely old apple-women, with their high caul caps, or their Brobdignagian beavers and lindsey-woolsey petticoats, where are they? Apples and oranges are still sold, but the sellers are saucy and are slatterns; the modern basket schools are eternally "moving on" since the advent of the "indigoes;" and the "fixtures" of the old school against blind hall doors, gateways, and in the entries to "no thoroughfares," are few and far between. The booksellers of the pave, and the librarians of the dead walls are dying out like the sedan chairman, and an unmerciful disaster promises to

"Follow fast and follow faster,"

until the umbrella women under the portico of the old senate house are swept into the Elysian Fields to join their fruit-selling companions who once guarded the approaches of the Alma Mater.

The Oldest Inhabitant comes, and will relieve us from saying more on the present occasion.

"Though greatly changed, sir, this street will not disappear from the records of the unknown city. Good and great men have lived and laboured here for the cause of humanity, and their works survive them, conferring blessings on the needy in the days of their pain and adversity. Many a poor mother has passed through her travail here, and went back to her family with a new joy; and many an aged citizen whom misfortune overtook has found a home in this quarter, and breathed his last in comparative comfort. Concerning one great institution I have already told you on our former visit, but there remains another that deserves honourable mention.

"Yonder there stands a building of cut stone with no architectural pretensions. Its founder desired to alleviate pain instead of ministering to taste or fashion. Those who have suffered silently and long during life have a feeling for fellow-sufferers, and so it was with the good Mr. Simpson. His bequest was intended to found an infirmary or hospital for the blind and gouty, having suffered himself under a combination of these complaints. The institution was founded in 1781, and a garden was allocated at the rear for the use of the patients. Modifications have taken place since its first opening, and others beside the blind have found a refuge within its walls. I know little about the early life of the founder, whose tombstone was to be seen some years ago in the old graveyard of St. Mary's, where the monuments of other noble benefactors of public charities are also to be seen.

"Up that street with the kingly name that leads to the Inns was dangerous ground once, the resort of thieves and idlers. Soap boilers' yards and stabling now cover what was once looked upon as "no man's land," and several years ago, in the early days of railways, wagons, lorries, and other railway appliances were manufactured here. The trade, however, was a short-lived one. The kingly street never improved much, and the jarvies for some years held it as a headquarters for a stand for their 'outsides' and 'insides'.

"Great Lying-inn Street itself was always a head-quarters for horseflesh and vehicles for riding, driving, hunting, and festive purposes. During the period of the Irish Parliament, trade of all kinds flourished here; and, as an evidence of the value of a resident nobility and gentry in supporting native manufacture, this street may be instanced in the matter of coachbuilders. The coachmaking element was always strong here. Among the largest firms that existed previous to the Union were those of Hutton, Costello, Smyth, Coole, and Williams. The first-named was that of John Hutton, the founder of the firm that still exists in the hands of his descendants on Somer's Hill. For 80 years from the commencement of the present century the coachmaking trade was still represented fairly in this street and the ones contiguous. Builders and timber merchants were also strong at one time in this quarter, and livery lacemakers, perfumers, stationers, printers, and map and print sellers, some of whom combined other trades. There were many private gentlemen's mansions in this street within the present century, but in the last century many men of rank and title and Irish M.P.s. resided here, among whom were Earl Altamont (John Denis Browne), Viscount St. Leger (Doneraile of Doneraile), Hon. Arthur Acheson, M.P., of Cavan, William Rainsford, Deputy-keeper of the Records, and other worthies. A few years ago, sir, there were a good few old traders and merchants existing in this street, whose firms dated back nearly a century, but at present I am doubtful if there are three firms in the street who date from the beginning of the century. I remember some flourishing old horse repositories for training, and prosperous livery establishments, but they have disappeared one after one. Sligo, that lived several years ago opposite Marsh-street, was a great horse-breaker, but he disappeared many years

before Dycer of Gallows Green. The horse-breaker's yard is built upon, and the knackers of Black Cow-lane have long since despatched the last of the cobs he trained; and the trunkmakers of Shamble-street have but an indistinct memory of the skins that once burst with flesh in Great Lying-inn-street.

"Opposite the Maternity Institution a little exhibition-room flourished for some years where wax works, marionettes, conjurors, and the 'eight wonders' of the world could be seen for one penny. Happy families of birds and beasts, sheep with five legs, and beautiful amazons with tortoise-shell toes and fingers, could be viewed here at any hour of the day; but the visitors were warned not to be too curious, or touch what they did not understand. Daniel Lambert sat in his easy chair as large as life, and Oliver Cromwell smiled in derision on a portion of the audience, who were not slow to vent their hatred in execrating the memory of 'Old Noll.' These were glorious days for the gutter children and 'mitchers' from school, for, when minus a halfpenny, they could gratify their young hearts by a long look at the Punch-and-Judy man, forgetful of the rod that was in pickle for them at home for staying out so late.

"At the crossing, sir, between Avenbush-row and the Mall a boasted conduit or fountain once existed, where many a pitcher was broken and eye blackened for flashing too much. Washerwomen's tubs, jarvies' buckets, and kettles warm from the hob were filled here; and hobbledehos made love with the young laundresses, and received shower baths in return for stolen kisses.

"The property of two houses in this street, belonging to Sir John Eccles, formed an endowment by Archbishop King towards the support of a lecturer for Little, or Old, George's Church. This little church was built towards the close of the 17th century, and attached there is a small cemetery. In the old square tower, which I remember ascending several years ago, there is a bell with some lettering and the date, if I remember aright, of 1719. There are several quaint monuments and tablets within the church, which underwent some alterations nearly twenty years since. An old-fashioned double staircase that led to the gallery or organ-loft was removed during the alterations, and as a witness of its removal, it struck me as a curious piece of old staircase and handrail work. At the same time, one of the large beams of red deal or memel that went across from wall to wall—inserted originally, I suppose, with a view to strengthening the structure—was cut down. It was a fine block of timber, and but scarcely moth-eaten on the outside. The builder engaged in the alterations sent it to the saw-pit, and some new doors and flooring boards for the church were made from it.

"Sir John Eccles was, I believe, the John Eccles who was one of the sheriffs of Dublin during the mayoralty of Sir Mark Rainsford, whose name appears on the pedestal of the statue of King William, with the date 1701.

"In the coach-building yard of Mr. Tonge—one of the last of the coach-making establishments that existed in this street—Mons. Soyer, the celebrated French cook, conducted a soup kitchen in the year of the famine. Here charity was dispensed to the poor through the medium of relief committees, and many families who were not in want received abundance from their effrontery and counterfeit appeals, while a very large number of the semi-starvelings and poor room-keepers suffered through their retiring diffidence.

"As to building improvements, sir, in this street, very little has taken place within the last thirty years or upwards. Public houses and gin palaces and grocers and others have made a little display with timber and paint, but even 'shop-front architecture,' so called, in this street is a mixture and jumbling of all that is pernicious to taste, except that of the most debased type. True artistic feeling, sir, is long since debauched here; there is a cataract in her eye, and it would take a skilful accouchement tantamount to a successful Cæsarean operation to bring a healthy archi-

tectural creation into life in Great Lying-inn Street."

After a short private chat and the making of an appointment, we parted with our venerable cicerone, the "Oldest Inhabitant."

OBSTRUCTIONS IN THOROUGHFARES.

We are glad to see that prompt measures have been taken by the local authorities in several places in respect to those street and footway obstructions which we have repeatedly directed public attention to. In this city, however, the nuisance continues, and several shopkeeper and stall-keepers continue to set the provisions of the Towns Improvement and other acts at defiance. The Corporation cannot plead ignorance of the fact, as we are well aware several members of that body have had their attention drawn to the subject. The Commissioners of Police, and the police themselves must know their duty, and it should not be necessary to so often remind them of their duties, which they are one and all bound to perform. While street vendors of apples or herrings are hunted about and told to "move on," the greatest obstructions are allowed to pile any amount of lumber on the footways. We say lumber, for a great part of their wares are built up with a foundation of "dummies," and many of the *bona fide* goods need the attention of the sanitary inspectors, for their appearance proves that they are neither sweet nor sound. Our remarks are not intended for individuals in any particular quarter, but are generally directed to a large class of offenders both north and south of the river. If a reform is to be carried out no exception must be made, and all must be meted equal justice. The owner who rents a shop does not become possessed of the footways and the portion in the street opposite. Every one of us contributes our share to the maintenance of the city, and none, no matter what may be his business, has a right to put obstruction in the way of another. Shopkeepers, if they like (and some of them do like), may carry their trade to a "high pitch," by exposing their goods, or suspending them from the upper stories, but it becomes another matter when he strips his shelves within and empties his cellars below for the purpose of covering the footways with his manifold wares. This is pushing business a great deal too far, and the sooner a prompt check is put to the pernicious practice the better. We call upon the Commissioners of the Police and the Corporate authorities of the city to do their plain and obvious duties.

THE ASPHALTING OF THE STREETS.

DURING a discussion in the Corporation on the proposal of the Irish Val de Travers Company to asphalt all the macadamized streets at the rate of 8s. 6d. per square yard, the payment to be spread over a period of ten years, Mr. Byrne said the committee had, after a good deal of negotiation, at length succeeded in obtaining the very advantageous terms now proposed by the Irish Val de Travers Company. He pointed out that there would be a considerable saving in the expense of maintaining the streets if they were all asphalted, and there could be no doubt that, as regarded cleanliness and comfort in travelling, the asphaltting of the macadamized streets would be a great boon to the citizens. The price paid for the asphaltting of Grafton-street and Henry-street was at the rate of 17s. 6d. per square yard, so that it would be seen that the terms now proposed were entirely within the means of the Corporation without borrowing. Half the entire sum was to be retained in the hands of the Corporation until the end of the ten years, and the proposal included the maintenance of the surface of the streets for the entire period of ten years. He moved that No. 1 Committee be authorised to carry

out the arrangement with the Irish Val de Travers Company. The motion, on being seconded by Mr. Bury, Alderman Ryan referred to the difference in price paid for asphaltting Henry-street and Grafton-street and that now proposed, and he asked what guarantee would be given that the work to be executed would be as efficiently done as that executed at the higher price. It was explained that the new work would not necessitate the laying down of a body of concrete, as in the cases of the paved streets, as the macadamised ones would supply the proper basis for the asphalt. The further discussion of the question was postponed.

CIVIC LYRICS.—No. XLIII.

THE DOOMED CITY.

(Air—The Deserter's Lamentation.)

When bruised and batter'd
With hopes all scatter'd,
And health long shatter'd,
Poor Dublin groans,
It needs no handle,
Nor lamp nor candle,
To shew the scandal
The city owns!

For years past thirty
Our streets—once worthy—
Are wrecked and dirty—
A prey to plague;
And ill a legion,
Fed by contagion
From some fell region,
Have been in league!

With well-fed pastors
And Civic masters
These sad disasters
Still grow more rife!
We won our laurels
By public quarrels
O'er health and morals,
And murdered life!

The drunken father
Who robs, than rather
Some substance gather
For wife and child;
And that lost mother,
To 'scape from bother,
Her babe will smother
When driven wild!

Such ills are growing
From bad men's sowing,
And there's no knowing
Where they may end!
Bad fruit in plenty
Is made a dainty,
And virtue scanty
Small aid can lend!

Alas! poor city—
Once wise and witty,—
You still win pity
In filth and crime!
Could earthquake swallow
Your Councils hollow,
Some good might follow
In after time!

CIVIC.

BOOKS RECEIVED.

Handbook for Emigrants proceeding to Adelaide, South Australia. By William Harcus, J.P. London: Street, Cornhill.

THOUGH no advocates for emigration, except under exceptional circumstances, yet we can say this handbook will afford much useful information to intending emigrants, who are either inclined to go of their own accord or forced to leave the old country through personal or other considerations. The handbook under notice is prepared under the authority of the South Australian Government. It gives a favourable description of the colony, detailing its resources under a variety of headings, for the purpose of affording a comprehensive view of what may be realised by workingmen and small capitalists who emigrate thither. The subjects treated of are—the natural resources of the colony, the land laws, what to do with the land, mines and mining, pastoral pursuits, details as to emigration and the qualities of

emigrants, material progress of the colony; wages, and the price of food and clothing, the extent and boundaries of the northern territory, and other matters. An appendix is added, containing notes of the capabilities of South Australia and the northern territory for fresh industries, by R. Schomburgk, the director of the Adelaide Botanic Gardens; and a report on gold mining in South Australia, by W. J. Peterswald, warden of the goldfields. The handbook is accompanied by some very useful maps and tables of trade returns and prices, and other diagrams of a generally needful description. From a look through the work, it appears to be carefully prepared, and the information reliable. Intending emigrants can satisfy themselves by procuring a copy of the work, which can be had gratis, on application to the Agent-General for South Australia, 37 Great George-street, London. Apart from it being a handbook for emigrants, the work is interesting and instructive, from the variety of information it contains.

The Trustees' Guide: a Synopsis of the Ordinary Power of Trustees in regard to Investments, with Practical Directions and Tables of Securities. London: Edward Stanford.

THIS work, from the pen of Mr. Bernard Cracroft, will be found of great value by persons holding the position of trustees. Before its appearance there was no book in existence which would serve as a guide to the judicious investment of trust funds. We are informed that the Financial Detail, covering over 1,000 securities, has occupied a special department in Mr. Cracroft's office for a lengthened period, each fact stated having been verified by reference to head quarters. The tables, extending over 120 pages, are admirably arranged, and the book is well printed on toned paper.

CHOLERA SHEDS AT KINGSTOWN.

At the weekly meeting of the guardians of the Rathdown Union, a communication from the Local Government Board was read, in which was enumerated the several cities on the Continent in which cholera had appeared. In reply to a request on the subject, permission was definitely received from the Kingstown Harbour Commissioners for the erection of cholera sheds on the West Pier at Kingstown. Plans prepared for the erection of these sheds, and tenders received for the work, were examined. The tenders were respectively £216, £175, £170, and £147. Final decision was deferred till a special meeting of the board be summoned to consider the matter.

TO CORRESPONDENTS.

THE TOLKA RIVER.—This somewhat historic river has been called by different names—the Tolka, the Tulkan, and the Tolekan. In the map of the county given in Rutty's Natural History of Dublin, published in 1772, this river is marked down as the Tallaghan River. It has also been called the Finglas River, on account of its passing by that village.

THE NEW ESSEX BRIDGE.—We cannot tell when the new bridge is likely to be finished. The contractor might be likely to say if he were asked this day twelvemonth.

HOUSEHOLDER.—Give notice of the matter to the Sanitary Inspector, who is supposed to visit the district, and if not attended to in twenty-four hours, draw the attention of the Commissioners of Police to the fact. If still no active movement is taken in the matter, put the case into the hands of a respectable solicitor, and await the result. The costs are certain to be recovered.

THE GAS COMPANY.—The directors are wise men and have always been wise, and it is not wonderful to hear that they will soon be a little wiser. It is also satisfactory to know that the shareholders are not so foolish as they have formerly been. We trust that the citizens of Dublin, who have always had a relish for strange news, will be prepared to take a grain or two more of salt with the next piece they are called upon to digest.

THE PEOPLE'S PARK.—We are unable to inform our correspondent what is being done in this matter. The slob-land still exists, and the cels are still basking in the verdant mud.

THE OLD WELLS OF DUBLIN.—We will probably at an early date devote an article to the subject, not forgetting the pumps, original and select.

THE MILITARY GATE.—This archway and tower, which formerly stood beside Barrack Bridge, was designed by Francis Johnston, architect. It was removed several years ago, and forms an entrance at Kilmalham to the Royal Hospital.

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood is up to the mark, and contains some very excellent papers. "The Parisians," chap. ix. is reached. "A Visit to Albion" is a burlesque on the recent visit of the Shah. A paper on Schiller gives an analysis of that brilliant poet's character. "The Carlists in Catalonia" deals with the present convulsions in Spain, although the article is in itself a historical romance. Another of these heavy onslaughts for which *Blackwood* is famous, is made on the Gladstonian Cabinet and policy, under the title of "Dragging out a Wretched Existence." The Conservative mind will realise it, but we are not called upon to say anything *pro* or *con* on its political bias.

Dublin University.—We have not received a copy of this magazine from the publisher, although we notice it here. We understand it is in Irish hands once more. The present number contains some good articles, among which are "Public Bathing," "Extension of Railways in Ireland," "Literaria," and "Witchcraft in Ireland." For sake of old times and old memories we hope the old University Magazine will have a long life, and improve with its age.

Frazer has a very good article on "Our Food Supply, and the Game Laws." It supports the abolition of the game laws to the extent that it gives not to every person, but only to the farmer, or his servants, permission to take and destroy the wild animals upon his land. The writer says, "There is not and cannot be a right of property in any one, even in the owner of the soil, over the *fera natura*." Of course there will be many persons who will dispute this argument. The game laws, however, will have to be greatly amended before they can be considered just or reasonable. Professor Blackie contributes an article "On the Relation of Metaphysics to Literature and Science." This is an able one, and handled with much force. A somewhat remarkable paper on the "Life and Teaching of Mohammed" appears from the pen of Mr. Newman. From Mr. Blackie's able article we quote the following extract:—

"Let us now state a little more distinctly what we have hitherto rather assumed than proved—why all philosophy that does not both begin and end with God must be unworthy of the name, and why all true theology is only another name for metaphysics. The deficiency of some of our most prominent modern scientific speculators, considered in the light of metaphysics, plainly lies in this, that they content themselves with certain fashionable technical names, such as law, force, sequence, development, evolution, natural selection, which at bottom expresses only methods of operation, but are given forth with an air as if they contained some idea of an ultimate cause, or, at all events, rendered hopeless the idea of finding anything in nature that looked more like a cause; that is, as if they contained a true metaphysics, or the best possible attempt at a metaphysics. But not one of these fashionable phrases contains any element which can be accepted as an explanation of a reasoned universe. To talk of development and evolution teaches nothing except the bare and very patent fact of gradual progress, unless you teach also whence the evolution proceeds: from God, says the Hebrew; from reason, says the Greek; and what say you, the wise men of mighty Britain in the third quarter of this nineteenth century? If you say that all this magnificently organised something comes from a mighty inorganic nothing, then you say something even less than I learned from the old Bæotian theologer, who taught that night was the mother of light; and I am entitled to hold your wisdom very cheap. If to avoid this impotency, you are willing to go farther, and say that the ultimate cause of all things is not nothing, but what practically to us is as good as nothing, only a vast unknown and unknowable, then, I ask, what thing is there within the range of your curious analysis of which you can say that you have penetrated into its essence by direct cognition? Do you know me, do you know yourself, do you know anybody or anything except by outward manifestation? And why should you imagine that you should be able to lay your finger directly on the Supreme Reason, when you cannot directly handle any finite reason? This unreasonable ignorance which you profess in order to justify your practical

atheism is, no doubt, just that old sophism of Hume, that the world is a product so utterly diverse from any work of human art, that nothing, however truly predicated, of the latter can with any safety be transferred to the former. But there is a chink in this logic through which any man may put his finger. A thing may be essentially different from another in one respect, and essentially like it in another. The shaping force of a Phidias or a Canova, moulding the rude marble into beautiful stone figures, is in one respect removed from the shaping force of the Supreme Reason moulding inorganic matter into bodies of wonderful living creatures, by all the difference that separates death from life; but it is closely akin to it, in fact identical with this Divine force, in so far as both are thoughts, both effluences on one and the same universal cosmic reason. In virtue of this thought-projecting reason, whose essential function it is, by a plastic unifying energy, to realise its inherent ideals, man is much more closely allied to the God above him than the monkey below; and the first chapter of Genesis, when it says that 'God created man in His own image,' pronounces a profound metaphysical truth, compared to which the wisdom of our modern induction-mongers and minute analytic fingerers sounds to a sane ear like the babble of children, the gibbering of ghosts, or the maundering of Bedlamites."

The *Gentleman's* continues several good serial stories, among which are "Clythe" and "Making the Worst of It." Mr. E. Walford tells a sad story of "Olive, Princess of Cumberland and Duchess of Lancaster." Mr. A. O'Shaughnessy supplies some good stanzas on "Zuleika." "Our Climbing Club" will interest tourists, and Mr. O'Donnell's "Pawnbroking in Scotland" will afford pleasant reading.

Tinsley for this month has a capital freight of stories. The following articles may be commended for perusal:—"The Theory of Fiction," "Sun Pictures," "Day Dreams of a Dawdler," "Laura Erle" and "The General's Cousin." The poetry is not of a very high class, but the magazine, as a whole, is on a par with many of its cotemporaries.

Cornhill is varied, dealing with criticism, geography, and science. "News from the Moon" is a very interesting article, so are "The Casuistry of Journalism," "Turkish Georgia," and "A Scotch Theological College." The general and scientific reader will find matters that will please.

Belgravia commences a new story—"A Tale of City Life." "Imaginary London" is absent. We suppose Mr. George Augustus Sala is hunting up materials in the New Cut or in the purlieus of Wapping, rendered famous by the Great Tichborne trial. "Village Tyrants" and "Across the Channel" are good papers. Guy Roslyn contributes a little poem, "Marriage Morn," which is illustrated. "The Pig Tax," "Tramp through Dartmoor," by Mr. Watkins, "Pilgrims and Strangers," and "Flat Fish Trawling off the Wight" are all good contributions.

St. James's continues "Miss Dorothy's Charge." "Rambles near Algeria," by Mr. Vizetelly, is pleasant reading; "American Journalism," by Mr. E. H. Hall, is a capital paper, and a "Plea for Painters," by Mr. Fenn, is equally so. The "Three Maidens" is a forlorn piece of poetry, but perhaps it was a maiden effort, and the love-struck are often forlorn creatures.

Macmillan's is an excellent number this month. Mr. Black's "Princess of Thule" sustains its interest, and promises to be on the whole a capital story. There is an able paper by Mr. Murphy on the late John Stuart Mill, and his Philosophy. Mr. Grove deals exhaustively with the "Talmud," and severely criticises the *Edinburgh Review* in defence of Mr. Deutsch. Sir John Coleridge's late lecture on Wordsworth, at Exeter, is given, and is worthy of reproduction.

The *Fortnightly Review* has some very good contributions. "Reform in Persia" is well written by Mr. R. S. Poole. General Cluseret continues his "Military Side of the Commune," a paper worthy of note, from the antecedents of the writer. Mr. J. S. Symonds deals with Polignano's Italian poetry in an eloquent and forcible manner. Mr. Anthony Trollope's story of "Lady Ann" sustains its early

promise. The editor deals with his accustomed ability with the "Struggles for National Education."

SANITARY AND OTHER NOTES.

LONGFORD.—At a meeting of the Longford Commissioners, the County Surveyor called attention to the state of the town, especially the south side of Dublin-street, where the houses have small sewers running through them, with nothing but a single flag as a covering. He also stated that he had examined the other parts of the town, and that he found them in a very filthy state, and recommended the erection of sanitary appliances, and said that in case of a visitation of cholera this autumn the present state of things would be productive of frightful consequences. The meeting then adjourned for the purpose of inspecting the places pointed out in Mr. Kirkby's letter. The commissioners met again at 4 p.m., when it was resolved to carry out the suggestion of Mr. Kirkby.

ARNAGH.—The Town Commissioners, acting under their sanitary powers, employed a number of men to clean out the river extending from Scotch-street bridge to Mr. McCrum's dam—a distance of about half a mile. Into this river, a considerable portion of which is subterranean, the greater part of the sewage of the city falls, and, as it had not been attended to for a long time, the accumulations of filth were enormous. Not only has much valuable manure been obtained by the purification of the river, but a better fall has been secured for the water. The work, now nearly completed, has been done under the superintendence of Town Inspector Nelson, at a comparatively small cost.

COLERAINE.—Street obstructions are receiving attention at the hands of the authorities in this town as well as in other places in the provinces. Offenders have received notices, warning them that they will be prosecuted if they continue to place barrels of potatoes, boxes of herrings, and other articles, on the footways and in the street, tending to obstruct the thoroughfare.

In re the Town Hall. Reference having been made to the state of the stairs leading to the hall, the committee in charge of the building were authorised to have them suitably covered, if deemed necessary.

Concerning the Leimaneagh lignite mines, a number of gentlemen from Coleraine, Ballymoney, and Bushmills, interested in this enterprise, visited the mines on Wednesday week. The entrance is now greatly enlarged; rails are laid along the various drifts; a tramway is being made to the main road; and in the course of a few days the works will be in full swing, when it is expected that about 25 tons a-day can be put to bank. The price has been fixed at 8s. per ton at the pit mouth, and there is likely to be a large local demand for the article. Already large consumers in Coleraine and elsewhere are making arrangements about carriage. The prospects of the undertaking are encouraging, and the speculation is likely to turn out a profitable one.

BRAY.—Amongst the cases heard on Saturday at Bray Petty Sessions were those of five traders who had been summoned for obstructing the footpath in the main street by placing their goods—fruit, furniture, old clothes, &c.—in front of their premises. Mr. George Keogh, solicitor to the Commissioners, appeared on their behalf, and Mr. John Reilly, barrister, on behalf of the traders. Mr. H. Brett, County Surveyor, and Engineer to the Township, proved that the placing of the goods on the footway caused a great obstruction to passengers. He stated that some time ago a space of 6 ft. from edge of kerbstone was flagged by the Commissioners out of funds provided by the Grand Jury and by subscriptions. Many of the householders flagged the remainder of footway at their own expense. Was of opinion that the Com-

missioners' rights included the entire road and footway from house front to house front. In case of garden railings being removed or thrown back, parties cannot afterwards use the space for trading purposes.

Mr. Reilly, for the traders, contended that they had acquired a title to the paved portions of the footways, from occupation for over twenty years, and if that were so, the justices had no jurisdiction. This proposition was, however, rejected by the bench. He instanced the cases of traders in Liffey-street and Pill-lane, which he said had been decided as not being encroachments, from usor.

Mr. Keogh read the 72nd section of "The Towns Improvement Act, 1866, by which it is enacted that any person putting furniture or other goods on a public thoroughfare shall be liable to a penalty of 20s. for each offence. He also read from the court records that on the 24th of June, 1865, two persons were summoned for same offences and fined by the Bench. If the defendants had any title to the paved portion of the footway they should have been prepared to prove it. Where such title does not exist, the Commissioners should not be called upon to compensate the parties.

In four of the cases a fine of sixpence, with costs, was imposed.

FACING POINTS ON RAILWAYS.

MR. R. F. Fairlie, the well-known engineer, who paid a special visit to the scene of the terrible railway accident at Wigan, and reported thereon, supplements his explanation as to the causes. He states it to be his opinion that "a much greater clearance or opening than is now allowed should be made between an open facing point and rail, seeing that to do this only effects the traverse of the reversing lever, which would be moved a few inches more than it now is. No doubt," he continues, "the space now given is ample if every wheel or pair of wheels were made true to one gauge and one thickness of flange, but this is not the case; each company has its own gauge, to which wheels are keyed on the axles, and this varies according to the notions of clearance or play each locomotive superintendent thinks it right to give. Again, the flanges of the wheels differ in thickness, those on some of the lines being 1 in. to 1½ in., while those on others are only ¾ in. to 1 in.; to these discrepancies, which we have to begin with, should be added the wear, which gradually thins or lessens the flange, and the more this is worn or reduced in thickness the greater the chance that it will strike an open point. Another reason for divergence is this, carriages which run on very curved lines generally have a greater clearance or space allowed between the flange of wheel and rail than is usually given on moderately curved roads, it being necessary to do so in addition to widening the gauge on curves to reduce the friction passing round them, and all these facts taken together increase very materially the chance of accidents at facing points. I strongly recommend the following for consideration:—1. That the space or opening between facing points and rails should be increased, because doing so loses nothing and gains very much. 2. That this space of clearance should be definitely fixed and maintained. 3. That the flanges of all wheels should be uniform in thickness. 4. That the play or clearance allowed between wheel flanges and the rails should be the same on all railways. 5. That these dimensions should be definitely settled by a committee of engineers selected for this purpose acting in concert with the Board of Trade, and afterwards made one of its standing orders. In this way an end would be put to this or that one's notion of flange thicknesses, clearances, or openings at points, and these when defined and religiously maintained would induce me at once to withdraw what I have said about reducing speed over facing points, and add five miles per hour to it, making up a speed of 80 miles per hour; this speed over facing points is ample (seeing that, however constructed, points must necessarily be a weakness, it being im-

possible to make them as efficient as the unbroken rail to enable the companies to do the work they are called upon to do, whereas a reduction of speed to 20 miles per hour, as has been suggested, would simply make this impossible."

THE THAMES AND LONDON BRIDGE.

We quote the annexed from "Imaginary London," a series of papers written by George Augustus Sala in one of the London monthlies. Though true to a certain extent, the strictures in relation to the Thames Embankment are somewhat unjust. The riverside roadway and embankment, as far as it has been completed, is a creditable piece of engineering, and a decided improvement to the metropolis. Very many years are likely to elapse before both sides of the Thames are embanked, from Chelsea to London Bridge. When such a work is accomplished, there will be still an improvement necessary to complete the picture—a line of houses on either side, of an ornate character, with their front to the river. The quays of Dublin are a matter of just pride; but what might they not be if the dwellings that flank them on either side were built with some regularity and architectural taste?—

"I am sorry when I regard the picture of the Thames pageant at Babylon Bridge forty years ago, because I reflect that as the years go by our noble stream seems to become uglier and more prosaic than ever. 'What!' you may cry with amazement, 'venture to say this in the presence of the Thames Embankment?' I do say it, deliberately. The embankment, albeit a wonderful work of engineering—(I am glad they gave you the Cross of the Bath, Mr. Bazalgette; but looking at what you have done by the riverside, her Majesty might have made you a *Quay C.B.*: this is a 'goak')—is from an architectural point of view, a failure. What does it matter to me if the Metropolitan District Railway runs underneath it, from Blackfriars to Westminster? I am no orator, as Brutus is; that is to say I am not a shareholder in the Metropolitan Railway, as Mr. Gladstone is proud of proclaiming himself to be. Granted that the embankment of the river—ludicrously small as is the extent reclaimed—has abrogated a certain extent of muddy foreshore, what else have we gained? Do they mean to build any palaces, public offices, churches, museums, theatres, hotels, restaurants, or even handsome shops and dwelling-houses on the frontage? Will they tolerate newspaper kiosques or open-air *cafés* on the Embankment? Will Sunday bands be ever permitted to perform there? Will the trees ever grow to be anything better than birch-brooms? Is it intended to place statues on those huge barren granite plinths? Will tasteful candelabra ever be substituted for the present pretentious but abominably hideous lamp-posts? Will the Embankment, in fine, by any period within the next century and a half, be anything better than a bare unfinished quay, spotted with yawning deserts where rubbish may be shot, and backed inland through four-fifths of its length by the meanest of mean brick-houses? Will it, as an architectural monument, ever be found worthy to be compared with the quays which line the Neva at St. Petersburg, the Seine at Paris, the Rhone at Geneva, or even the Liffey at Dublin? I am entitled to ask this question, since, after all the fluster and braggadocio which has been lavished over the Thames Embankment, months after months are passing, as years after years will probably pass, without anything being done to make it a really complete and grandiose performance. It is a very grand thing, no doubt, to be able to pass under the dry arches of the Charing-cross and Waterloo-bridges; to be able to peep into the Temple-gardens; to seek Inigo Jones's water-gate at the bottom of Buckingham-street rotting high and dry, like a stranded whale; and to observe that mysterious boarded up arch in the basement of the river-front of Somerset House!—was it a kind of fiscal Traitors' Gate, I wonder, whither revenue defaulters were brought in penny steamers at dead of night, to be confined for ever and ever in the Somersetian coal-cellars, for non-payment of their stamp duties? But I want something more than these privileges. I want the Embankment to be something more than a camping ground for hulking roughs and black-guard little boys. I struck the Embankment the other day in a hansom at the bottom of Norfolk-street, and purposing towards Whitehall. I really don't think I met more than four wheeled vehicles or a score of foot passengers throughout my entire

journey along the quay. Among the pedestrians I saw two parliamentary reporters, and a Radical M.P., strolling down to Westminster; an Irish applewoman hotly chased, I have not the slightest idea for what reason, by an athletic police constable; a cadaverous looking gentleman, closely shaven, and reading something from his book, and whom I conjectured to be either an actor learning his part, or a clergyman reading up Barrow or Stillingfleet—it was Friday—with a view to his next Sabbath's sermon; a bull-necked young man in corduroy, with a fur cap, who was prowling along, cracking nuts, with a felonious expression of countenance; while the 'residuum' was made up of filthy and three-parts naked urchins of both sexes, sprawling on the parapets, fighting on the curbs, or paddling in the mud at the base of the river stairs. And when I turned from the quay to the river, I found the prospect quite as gloomy. As for old Father Thames, I declare that he looks dirtier than ever. The increased rapidity of the current, caused by the narrowing of the channel has induced a 'scour,' no doubt, and dredged up all the mud, which, to all appearance, has never had time to settle down again. The Thames, the day I looked upon it, was of the precise hue of that famous great coat in which the Right Hon. Mr. Ayrton, First Commissioner of Works, is so fond of attending public ceremonials, at which every other official personage appears either in ministerial uniform or in court dress. It was of the dingiest brown. The usual barges full of ashes, bricks, slates, and manure were crawling along; the Thames Police Station moored off Somerset House looked as villainous as a decayed ten-gun brig converted into a receptacle of waterside criminals could well look; and ever and anon the dun-coloured river was ploughed up into furrows of yellow froth by the paddle wheels of one of those abominable little steamers, the sight of which I loathe."

PARISH MORTUARIES.

We are glad to see that there is likely to be soon a reform in the management of parish mortuaries, and that less danger will be run in the conduct of post-mortem examinations and inquests—

"Dr. Hardwicke, the deputy-coroner for Central Middlesex, held an inquest on Saturday last, at the Cherry Tree Tavern, Bowling-green-lane, Clerkenwell, on the body of Thomas Longley, aged 53 years, a parish employé, who was found dead after meeting with an accident, at his lodging, 24 Aylesbury-place.

The jury proceeded to the parish mortuary to view the body. It was in an advanced stage of decomposition, lying in a common coffin, and notwithstanding that some carbolic acid had been used as a disinfectant, a strong effluvia from the corpse pervaded the mortuary, and made several of the gentlemen ill. They complained of the risks they and, through them, their families ran, and asked if some steps could not be taken to remedy such evils, and perhaps save—especially now that rumours were afloat of the approach of cholera and typhoid fever—the lives of others who might be called upon to carry out a similar public duty as that for which they had been summoned.

The Coroner remarked that it had been suggested by himself, and also by Dr. Lankester, that the vestry of every parish should provide the coffins and shells used in the mortuaries with lids having a pane or sheet of glass let into them. By this means jurors and witnesses might view the bodies without discomfort; and, furthermore, if a little powdered charcoal were placed inside the coffins, and the attendant were allowed to use a cup of disinfecting fluid, the mortuaries would be made unobjectionable not only to jurymen, who were comparatively strangers to such places, but to medical gentlemen and others whose business called them there. By these simple yet efficacious means all danger would be removed.

It was shown by the evidence of several witnesses that the duties of the deceased were of a disagreeable nature; that on Tuesday morning he went home very unwell, and refused to take his breakfast, saying that he would lie down for an hour. His wife left the house on an errand, and upon her return found him lying at the bottom of the staircase, insensible. She immediately called in a medical gentleman, who pronounced life to be extinct. A post-mortem examination showed a dislocation of the second and third vertebrae and pressure on the spinal cord, which were, no doubt, the cause of death. The deceased, it is believed, had fallen downstairs.

A verdict of accidental death was returned. The following resolution was drawn up, signed, and forwarded to the vestry: 'At the inquest held

at the Cherry Tree Tavern, the jury sworn and empanelled to inquire into the cause of death of Thomas Longley, wish to observe that it would be of great benefit to those who have to view the bodies in the mortuary, if the person in charge would provide glass lids for placing over coffins containing bodies in a decomposed state, and the exposure of which is found to be very offensive and dangerous to health; also that the man ought to be instructed in the use of disinfectants."

We would direct the attention of the corporate authorities to the recommendation contained in the foregoing resolution. It is one entitled to serious consideration. In this city there is also need for more public mortuaries, and a more efficient system of management in those that exist.

TYPHOID FEVER IN DUBLIN AND LONDON.

THE indolence and negligence shown by the Corporate authorities of Dublin in face of danger, we have no hesitation in saying is criminal in the highest degree. Vainly have they been applied to by the Sanitary Association, and continually and persistently have we kept the neglected condition of this city before the eyes of the public, yet inaction or a half-hearted effort, whenever made, is the only result. The death of Lady Talbot de Malahide, and of her daughter's children, of typhoid fever, and the existence of the disease in our midst, ought to be sufficient to have led to increased exertions to guard the poor and rich in our city against the spread of the disease. Not only typhoid fever, but cholera may swoop down in force upon us before we are half prepared to meet such dangerous visitants.

We wish to direct the attention of our citizens and readers to the annexed extract from the *Medical Record*:-

"The outbreak of typhoid fever, to which attention has been this week drawn in Mayfair and Marylebone, is one of the most remarkable and severe outbreaks with which we are acquainted. A great number of families have been attacked, and eminent medical men have largely suffered. We have been at some pains to ascertain the particulars. We are acquainted thus far with about 165 cases occurring in forty-seven families inhabiting Wimpole-street, Harley-street, Nottingham-place, Cavendish-square, and the surrounding district, with outlying cases in Grosvenor-square, Portman-square, Grosvenor-street, Curzon-street, Hyde Park-gardens, and St. John's-wood. Among the households attacked are those of Dr. Murchison, Mr. Maunders, Dr. Gowers, Mr. Spencer Watson, Mr. John Wood, Dr. G. P. Murray, Mr. Hallé, Dr. Buchanan, Dr. Liveing, Mr. Fairlie Clarke, Dr. Andrew Clark, Lord Alfred Paget, Mr. Earnest Hart, Colonel Knox, Mr. Christie, C.B., Dr. Fuller, Mr. Arnott, Mr. Isaac, Dr. Priestley, Mr. Harry Emanuel, Lord Fitzwilliam, Hon. Mrs. Duncombe, and others. The cause of this severe epidemic seemed at first very mysterious; but a clue has been suggested which leads pretty surely through the maze. The consideration of the character of two outbreaks in his nursery led Dr. Murchison to suspect his milk-supply as being the vehicle of the poison, as it has on several occasions during the last few years been proved to be. Thus in the first outbreak, three children who were drinking household milk were alone attacked, while presently, when these were recovering, the two who were drinking 'nursery milk' from the same dairy were attacked, suggesting successive contamination of separate supplies of milk; and a precisely inverse observation was made in respect to milk from the same dairy in a second case. The suspicion once started, the source of milk supply in the forty-three families reported by medical men as suffering from invasions of typhoid was investigated, and it was found that, although living in different parts of the town, forty out of the forty-three families were supplied from the same dairy. The disease is obviously not traceable to any particular line of sewers, although those in the neighbourhood of Cavendish-square, Wimpole-street, and Queen Anne-street must now be in a very dangerous state; and the inhabitants of that important district cannot be too earnestly warned to protect themselves by a liberal use of disinfectants, and by ascertaining that their drains are well trapped. We have said that circumstances point very strongly to the milk supply being the source of the poison; and so much is this the case that Sir William Jenner and Dr. Murchison, who have been called to see a number

of the patients, have thought it their duty to represent the urgent nature of the emergency to the vendors of the milk, and to advise them to suspend their trade. A joint committee of inquirers, consisting of Mr. J. Netten Radcliffe, on the part of Mr. Simon; Dr. Whitmore, the medical officer of health for Marylebone; and Mr. T. Chalmers Morton and Dr. Corfield, for the vendors of milk, proceeded on Monday evening to the farms whence the supply is drawn, in order to investigate the possibilities of foreign sources of infection to the milk at these farms. As material for doubt we may state that this dairy is conducted with a strictness and an uprightness which make it morally certain that the milk has not been tampered with since it reached the dairy; moreover, tests by the hydrometer and the creaming-glass are regularly applied. To all this we attach little importance, however, in such a case. The hydrometer and creaming-glass are most easily cheated by the subtraction of cream and the addition of a little warm water. This is very well known to milk-farmers, and should be to the managers of this dairy. But we may state that this milk has been many times tested by Mr. Wanklyn—our best milk analyst—and has passed as good average London milk, which could not be described as adulterated, and has a right to take its place as 'pure milk.'"

Now let us ask, how does this city stand in regard to its milk supply? Are we not aware that numerous prosecutions have taken place, and convictions for selling adulterated milk. Yet the adulteration goes on still. Pure milk in this city, as far as it comes from the vendors and dairies, is scarce indeed. Were we even to suppose it pure, from what kind of cattle is it often taken? How are they housed and fed? Can cows housed in back yards for several months in sheds where they have scarcely room to stand or lie down, and where their cleanliness is not particularly attended to, be considered a good source for our milk supply? A daily inspector of dairies and cow sheds in Dublin is as necessary as a daily inspector of lodging-houses.

We confidently trust that the milk question will not be lost sight of at the present time, and that measures will be taken on all sides to put our city in such a state of sanitary efficiency as duty and impending danger warrant.

DUBLIN SANITARY ASSOCIATION AND THE PUBLIC HEALTH.

At a meeting of the Executive Committee of this Association a few days ago the Sub-Committee of Inspection brought up a report of the result of their re-inspection of the premises respecting which the Public Health Committee allege that the complaints of this committee of the 28th ult. were unfounded. In the opinion of the sub-committee there were quite sufficient grounds for the former complaints, but they reported that many of these places are not worse than the great bulk of the houses in the poorer parts of the city; and that the appearance of the premises greatly depends on the state of the weather at the time of inspection. It is evident that until the Corporation shall have established thoroughly efficient organization for the removal of refuse, and have put the system of inspection on such a basis as will ensure the thorough and frequent inspection of the city, and have otherwise taken effectual means for the drainage of all such back yards, it is hopeless to look for any permanent improvement in the condition of the city.

It was announced that a sanitary association was being organized at Cork, with the approval of several eminent citizens.

At the quarterly meeting of the Corporation a letter was read from the Town Clerk, submitting a letter from the secretary to the Local Government Board, relative to a communication received by the board from the Dublin Sanitary Association, relative to the threatened approach of cholera to this country, and the general sanitary condition of Dublin and other cities and towns in Ireland, in which the association represent that there is a want of sufficient activity on the part of the Public Health Committee of the Corporation.

Mr. Maclean entered into a lengthened ex-

planation in defence of the Public Health Committee. He said the Public Health Committee were anxious to have the co-operation of such gentlemen as were to be found in the Sanitary Association, but it was to be regretted that the correspondence which passed between them was not conducted in as good a spirit on the part of the Sanitary Association as might be desired, and this he attributed to the misrepresentation of officials and the influence of a certain class of medical men, who acted in the matter for their own purpose. He pointed out the difficulties with which the Public Health Committee had to contend in the want of sufficient legislative powers, and the want of sufficient funds, and in the habits of the people, which constituted the greatest difficulty in the way of accomplishing sanitary reforms. Having enumerated the large amount of sanitary work which the Public Health Committee carried out, he moved the insertion of the letters read on the minutes.

Mr. Lawlor seconded the resolution, and took occasion to state that he had visited the house in Ardee-street which was represented by the Sanitary Association to be in such a foul state, and he came away with the distinct impression that there was no foundation whatever for the report from the Sanitary Association in reference to that house.

Mr. Dennehy was of opinion that the Public Health Committee should be reconstituted, and he suggested that a superior officer of the Corporation should be appointed to superintend the sanitary delegates.

The letters were referred to the Public Health Committee.

We regret there should be any cavilling over matters of such vital importance as the public health. It must be acknowledged that there is and has always been a sad lack of sanitary efficiency on the part of the local authorities of this city. A greater necessity exists now than ever for renewed action on the part of all, both regulars and volunteers.

In view of an epidemic, the Local Government Board, seeing the difficulties that beset divided authority, have availed themselves of the powers conferred by acts of parliament, and have constituted the South Dublin Union Board as the sole sanitary authority to carry out precautionary measures to guard against the approach of cholera. In the face of this decision, we suppose the Corporation will look on unmoved. The Public Health Committee of that body will, of course, not dream that any reflection is cast upon them, and will still continue to take credit for the wonderful amount of labour they are performing for the common weal.

In a short time, however, "we shall see what we shall see," but in the meantime the unfortunate tax-payer will have to pay the piper and the undertaker into the bargain. Local rule is a glorious privilege.

At a meeting of No. 1 Committee of the Corporation, upon the application of the secretary of the Port and Docks Board, the attention of the committee was specially called to the want of paving of the roadway west of the Custom House to Northumberland Buildings, and the draw-bridge. An estimate of the cost, £1,488 10s. was submitted by the engineer, and the committee directed that the council should be asked to present for that amount. A communication from Mr. C. M'Mahon was read in reference to the construction of sewerage works in Berkeley-street. The City Engineer was directed to confer with Mr. M'Mahon upon the subject, and report the result to the committee at next meeting. Mr. George Campbell, director, and Mr. Fottrell, manager of the Irish Val de Travers Asphalt Company, had an interview with the committee, and submitted a written proposal for the asphaltting of the roadways and footways of the city, setting forth the cost, mode of payment, &c. The secretary was directed to submit same to the Right Hon. the Lord Mayor, with a request that it should be brought forward at the meeting of the council on Monday next.

STATISTICS OF LONDON.

We are told that the following statistics were supplied by Colonel Henderson, the Chief Commissioner of Police, at the request of the Shah, during his recent visit to London:—

"The area of London, consisting of the Metropolitan police district, 688½, and the City police district, 1½, is 690 square miles. The population, from the census tables of 1871, of the Metropolitan police district is 3,810,744, and the estimated increase to this date, 1873, is 140,018; the City police district is 74,897, affording a total population of 4,025,659. The total length of streets and roads patrolled by the Metropolitan police is 6,612 miles, and the addition or increase in the length of streets during the past ten years is 3,623 miles. As the crow flies, from London to Point de Galle the distance is 6,600 miles. Teheran is in the direct line between these two places, 2,800 miles from London, and 3,800 miles from Point de Galle. The number of inhabited houses in the Metropolitan police district is 519,489, in the City police district 9,905—giving a total of 528,794. The number of omnibuses is 1,400, and of hackney carriages 8,108. The estimated number of horses drawing public carriages, allowing two horses for each hackney carriage and six horses for each omnibus (which is about the average number), is 25,000. The strength of the Metropolitan police is 9,927, and of the City police 785—giving a total of 10,712. The numbers of cattle, sheep, &c., sold last year in the Metropolitan Cattle Market were:—Oxen, 240,000; sheep and lambs, 1,525,000; calves, 30,000; pigs, 8,500—total, 1,803,500. The quantity of dead meat brought to the Metropolitan Meat and Poultry Market during the year 1872 was as follows:—Country meat, 87,170 tons; town-killed and foreign, 66,875 tons—total, 154,045 tons. The town-killed meat was no doubt bought alive in the Metropolitan Cattle Market.

CAMBRIAN ARCHÆOLOGICAL ASSOCIATION.

THE last excursion of the Cambrian Archæologists this season was a very interesting and enjoyable one. The first stoppage of the day took place at Monachty, or Monachty, which is a fine old manor house of the Tudor period, and containing some fine oak panelling. The Rev. J. Williams, in his "History of Radnorshire," reprinted from the "Archæologia Cambrensis," refers to this structure as "an antique farm house called Mynach Ty, or church house," where several years before some stone coffins were dug up. He adds—"Thither at the dissolution, in the time of Henry IV., the ejected monks of Abbey Cwmhir transferred their establishment, and in this seat of seclusion from the world maintained privately their former religion and habits in opposition to the recent innovations of Cranmer, &c." To this retreat Rousseau meditated retiring from France in 1766, and preparations were made for his reception.

Mr. Green Price produced a letter written by Chace Price, his ancestor, to a brother, making arrangements for the reception of the expected visitor.

At Pilleth, the church, which has been lately under the hands of the architect and "restorer," was the principal object of interest. There is a monument, with a male and female figure, to the memory of John Pryse, of Pilleth, Esquire, and Catherine, his wife, who died, the former in 1597 and the latter in 1689. The church is of about the middle of the 15th century. The choir is divided from the nave by an oak screen, and the old oak roof of the nave has been preserved. A very old parish chest of oak, in a wonderful state of preservation, contains the parish registers and documents. There were formerly hung in this church a rusty broken sword and pair of spurs; they are now at Norton Manor, in the possession of Mr. R. Green Price. Some earthworks in this neighbourhood were also visited by some of the party.

Proceeding eastward, the church at Whitton was the next object visited. This church is in a very dilapidated condition, and is about to be restored. Mr. Bloxsome took occasion to express a hope that certain portions of the structure of the 14th century would be carefully preserved in whatever "restorations" were contemplated. Of course money would have to be spent on it, but many hundreds of pounds might be saved by going judiciously to work, and refraining from pulling down what they could not put up again. Let them preserve as much as they possibly could of their ancient churches.

Soon afterwards Norton Manor, the seat of Mr. Green Price, was reached—a lovely retreat in a little valley among the hills, with park-like, well-timbered grounds stretching in front, and sheltered

by rising ground, right and left. Here the party, by this time tired and hungry, were most hospitably welcomed and entertained by Mr. and Mrs. Green Price and their family. After luncheon,

Mr. Green Price proposed a single toast, "The Members of the Cambrian Archæological Association," to which

Mr. Bloxsome responded, on behalf of the association.

Afterwards there was a revival of the discussion, which had run through the series of meetings of the association during the week, as to the site of the last resistance of the British chief Caractacus to the advance of the Roman invaders.

The Rev. Mr. Green, Vicar of Whitton, thought Tacitus had been rather overlooked in the discussion, and without quoting from the text he proceeded to point out that in attempting to solve the debated question, gentlemen had overlooked the important question as to the direction in which the two forces passed across the country from east to west. He pointed out that Tacitus narrated that the Roman army got to Holyhead and saw Ireland, and that it was after that that Ostorius set out to attack the Silurians, that Caractacus then cleverly shifted the scene of war to the northern tribes, and marched to meet the Romans.

Rev. Mr. Barnwell made some remarks in reply, and it was ultimately resolved that it was a "drawn battle" between them.

After a pleasant half-hour spent in walking through the grounds of Norton Manor, the party next proceeded to examine Norton Church, which has recently undergone a complete restoration or renovation at the hands of that accomplished church architect Sir Gilbert Scott. The church is in the exterior a plain edifice of limestone and Bath stone facings. The interior is almost gorgeous for a village church. There is a fine screen, and all the appurtenances which go to make a modern church restoration. The churchyard is kept up in the most neat and orderly manner, and does infinite credit to the good taste of the churchwarden, whoever he may be.

In the evening there was a final meeting of members, and this concluded the proceedings of the Knighton meeting of the Cambrian Archæological Association.

PAT AND HIS "BOSS."

(Founded on Fact.)

"Put beggars on horseback—they get so uncivil,"
Said Pat to his new "boss," who nagged him all day,
"If the proverb be true, they 'll drive to the 'devil';
So the 'devil a bit 'I 'll stand in their way."

THE SOCIAL SCIENCE CONGRESS.

THE congress takes place at Norwich in October this year, and promises to be both attractive and useful. In the different sections there will be several special questions discussed of a vitally important nature. We would be glad to see a meeting taking place in Dublin next year or the year after, and we have little doubt if the professional gentlemen who have lately taken an important part in sanitary matters in connection with our Sanitary Association, and outside, were to actively interest themselves in the matter a congress might be arranged for this city at an early date. The following are the special questions appointed for discussions:—

INTERNATIONAL AND MUNICIPAL LAW SECTION.—

1. Is it desirable and practicable to effect an assimilation of English and Foreign Commercial Law? and, if so, to what extent, and what steps should be taken to effect such assimilation? 2. In what manner may the framing and passing of Acts of Parliament be improved? 3. What change, if any, is it desirable to make in the law relating to agricultural tenancies?

REPRESSION OF CRIME SECTION.—

1. Are any and what improvements necessary for the administration of justice in quarter and petty sessions? 2. In what way should the punishment of young persons under 18, especially boys or girls of 9 or 10 years of age, be regulated? 3. What improvements are required in the system of discipline of county and borough prisons?

EDUCATION DEPARTMENT.—

1. Can the Universities help in the examination of secondary teachers and secondary schools; and can they in any way afford the special training required for secondary teachers? 2. What are the effects of the pressure of competitive examination upon education? 3. How can education be brought to bear on; or nitherto untouched portions of the population?

HEALTH DEPARTMENT.—1. What are the most convenient administrative areas for sanitary purposes? and what are the best means of administering the sanitary laws? 2. Should there be a special diploma for medical officers of health, and if so how should it be granted? 3. What provisions are required in a general building act so as to secure efficient sanitary arrangement?

ECONOMY AND TRADE DEPARTMENT.—1. On what principles should local taxation be levied? and what should be the principles of local administration and government? 2. What should be the general relations of employers and employed, both trade and agricultural; and are industrial partnerships desirable? 3. On what principles should friendly and other kindred societies be based, and is Government control of them desirable?

Voluntary papers on other subjects coming within the scope of the departments will be read and discussed.

HOME AND FOREIGN NOTES.

NEW GRAVING DOCK, WATERFORD.—The ceremony of raising the first "sod" for the purpose of forming a graving dock at Waterford, was performed yesterday by his Excellency the Lord Lieutenant. It will be 400 ft. long by 80 ft. in breadth.

AGRICULTURAL STATISTICS.—From a return just issued by the Registrar-General we learn that the total estimated value of horses, cattle, sheep, and pigs, as taken by the enumerators this year, is £37,479,182, being an increase of £340,016 as compared with last year.

Mr. J. O'Beirne Crowe is at present engaged on the second part of Dallan Forgaill's "Amra; or Elegy of St. Columba Cille." The first part, issued some time ago, and printed for the first time from the original Irish in "Lebor na hUidre," contains the ancient preface, the *Exordium*, or prelude to the Amra proper, with the ancient commentaries, and a literal translation of the whole. The second part, which finishes the work, will contain topographical and historical notes, a critical and grammatical analysis of the text, and copious indexes.

STEAM WHISTLES IN THE CITY.—At the Northern Police Court on Wednesday, Messrs. Courtney and Stephens, Blackhall-place, appeared on summons for blowing a steam-whistle for the purpose of assembling their workmen. Mr. Ennis, on behalf of the prosecution, read the section of the act under which they proceeded, making the parties who used a steam-whistle within the city, without the authority and sanction of the sanitary body, liable to a fine of £5. No such authority had been given to the defendants, and in consequence of numerous complaints about their steam-whistle, notice was served upon them in March last to discontinue the practice, but no regard was taken of that, and up to the very date of the summons the whistle was kept sounding day after day, and the Corporation had no alternative but to bring the charge. Mr. Meldon appeared for the defendants, and said that the whistle was of great use to the workmen; that it was not in any way objected to by the respectable inhabitants of the locality, many of whom had memorialised the Corporation to allow the use of the steam-whistle; and that, under any circumstances, he apprehended there was informality in the proceedings, because the summons averred no particular day of offence; and the offence, if it was one, was not committed by the firm, but by their men. Evidence having been given upon all the points for and against the summons, the matter was, by consent, adjourned for a fortnight, in order to give the defendants an opportunity of applying to the Public Health Committee of the Corporation for a licence to use the whistle. [We hope the very energetic officers of the Corporation (police constables or others) will as diligently look after many other glaring infringements of the municipal laws—that is, when they have time.—ED. I.B.]

The first volume of the "Monasticon Hibernicum," a history of the abbeys, priories, and other religious houses in Ireland, will probably be issued during this month, by Mr. W. B. Kelly, of Dublin.

IRISH MANUFACTURES AT THE INTERNATIONAL EXHIBITION.—

In a report by Mr. Francis Bennoch, given in the current number of the "Journal of the Society of Arts," on Silk and Velvet Manufactures, we find the following notice of the productions of two Dublin firms:—"What considering the relative merits of upholstery and similar material, I may well draw attention to the manufactures of Ireland, where, in Dublin, the productions of W. Fry and Co. (3,573), and Pim Brothers and Co. (3,624) show some of the most notable articles to be found in the whole Exhibition. Their plain and figured poplins are unique, and as

part of the world produces anything fit to be compared with them. The figured designs are in exquisite taste, and the richness of colour all that can be desired, whilst their fabrics for curtains and general rich upholstery are simply superb. Why should the manufacture of poplins and kindred stuffs be peculiar to Ireland, and how is it they can hold their own in competition with the whole of Europe? It must not be supposed that there are not hosts of imitators in France, Germany, and Switzerland. On the contrary, there are many, yet in those countries ladies rejoice in becoming possessed of an Irish poplin dress. This fact, coupled with the unmistakable natural taste and industry of the people, leads to another question: why are not other branches of silk industry established in Ireland? From the one great success, to which I have unaffected pleasure in referring, I am persuaded that in any special manufacture to which their genius may be directed they cannot fail to excel. In no former Exhibition have they made a display so creditable, and when the next period arrives, we may hope that still further advances will be made, not only in these special productions, but also in a much wider range of silk manufacture."

FINE FOREST GROWTH IN THE WABASH VALLEY.—In a description of the vegetation of the bottom lands of the lower Wabash, Mr. Robert Ridgway gives numerous particulars respecting the dimensions and habit of the prevalent forest trees. These number nearly 100 species, of which about 70 exceeded 40ft. in height, about 50 exceed 70ft. and nearly 30 are known to reach or exceed the height of 100ft. The ordinary height reached by the forest-mass is about 130ft.; and above this general level, occasional trees rise to an altitude of 200ft., or perhaps more. The largest of these trees is the plane (*platanus occidentalis*), attaining sometimes a diameter of 20ft. and a height of 200, with the lowest branches 90 or 100ft. above the ground. The tulip tree (*liriodendron tulipiferum*) is the second in size, being found 180ft. high, and 37ft. in circumference. A stick from this tree is mentioned as measuring 74ft. in length, being straight and symmetrical, and tapering from 23ft. to 18 in circumference. The tallest cottonwoods (*populus monilifera*) are equally high. The pecan (*carya olivaeformis*) reaches 175ft. in height, with a clean straight trunk of 60 to 90ft. Among the oaks the most stately and symmetrical is the "Spanish oak" (*quercus coccinea*, var.), frequently 150ft. high and 15 to 20ft. round; while the most massive is the burr oak (*Q. macrocarpa*), of equal height and rather larger diameter. The white ash follows, nearly 150ft. high; the black walnut, 125ft. high, and over 20ft. in circumference; and the white oak, 140ft. high, and over 17 in circuit. The tallest tree in proportion to its girth is the sweet gum, which exceeds an altitude of 160ft., with a clear stem of over 100ft., and a maximum circumference of 17 or 18ft. The honey locust attains a height of 120 ft., the red maple exceeds 100, and even a sassafras has been measured which had reached a height of 95 ft.—*Garden*.

In the centre of St. Petersburg, on the south bank of the Neva, a large open space has been recently converted into a park. This space is surrounded by the principal buildings of the city, namely the Winter Palace, the Admiralty, the Senate House, Isaac's Church, and the Generalstab or Horse Guards, and opens into the three principal streets, Newski Perspective, the Wassnesensky Perspective, and the Erbenstrasse. It has been laid out in the French style of city squares, and is tastefully planted with trees and shrubs, and embellished with three ornamental fountains. One feature in this park, worthy of imitation, is that certain portions of it have been set apart as playgrounds for children.—*Garden*.

"A VISIT TO EPPS'S COCOA MANUFACTORY.—Through the kindness of Messrs. Epps, I recently had an opportunity of seeing the many complicated and varied processes the Cocoa bean passes through ere it is sold for public use, and, being both interested and highly pleased with what I saw during my visit to the manufactory, I thought a brief account of the Cocoa, and the way it is manufactured by Messrs. Epps, to fit it for a wholesome and nutritious beverage, might be of interest to the readers of *Land and Water*."—See article in *Land and Water*, October 14.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London." Also, makers of Epps's Cacaoine, a thin refreshing beverage for evening use.

MANUFACTURE OF COCOA, CACAOINE, AND CHOCOLATE.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—See article in Part 19 of *Cassell's Household Guide*.

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VOL. XIV.—No. 329.

Sanitary Considerations.



IN the preservation of the public health there is a guarantee that the national strength and prosperity can never vitally suffer. Epidemics, whether they preceded or succeeded periods of scarcity and famine, have played sad havoc with the population of this island. It cannot be said that it was owing to the great lack of medical knowledge in years or centuries past that people suffered, but it was rather to the neglect of the most ordinary homely and public duties. Cleanliness in dress and person was ignored by a great majority of the people, and the homestead or hovel received scarcely more attention than the pigstye. Where men and women herded and lived together like cattle, the seeds of disease were inevitably engendered. A hovel in the country may not be as bad as a cellar or garret in the city; but the home, wherever it may be, where so many of the hours of human life are slept away in internal foulness, even though God's pure air may be without, must poison the lives of those within, and endanger the health of those in its vicinity. We have learned many lessons within these last few years, and at the present moment lessons are being taught to us that ought to wake us to a consciousness of our position, and of the duties each and all of us are called upon to perform. Would it be wise, or honest, or honourable on the part of any member of society to look on unmoved and see his next-door neighbour robbed, or even a perfect stranger to him? If it would not be honourable to see one's neighbour's house plundered and his property carried off by a burglar or thief, it must, on the other hand, be criminal on our part to remain silent while we have proofs positive that the neglect of one neighbour is endangering the lives of the inhabitants of the whole neighbourhood. Whether it comes through public or individual neglect that a nuisance exists, and is killing or poisoning the people, it would be equally guilty on the part of any one to forbear to speak so that the danger might be removed. Remonstrance is plainly every man's duty when he discovers his fellow man nursing a nuisance; and if remonstrance fails, let the duty of the remonstrant be shifted at once on the backs of the authorities, so that measures may be taken at once for its removal. It is not a gracious task, we know, for officials no more than private individuals to go snuffing or smelling

about apparently respectable homes; but however disagreeable or ungracious the task may be, it is an obvious duty which must be discharged for some years longer, until the habits of the people are formed, and universal cleanliness in homes and public places is observable.

Compulsory education to a great extent is still necessary, and compulsory measures are an absolute necessity in the matter of cleanliness and sanitary reform. Nature supplies all the elements and materials requisite to healthful life; civilization and society has manipulated and changed all these elements to minister to its wants, and generally with the worst results. Light, air, water, and the edible products of the virgin soil exist for us in a pure state; but each in its contact with man, and his ways and means, is vitiated. Nature is all purity in its prime essential, and the dread visitations which we attribute to the ways of God, are the direct consequence of the criminal ways of man. Let there be no doubt about the matter. It is not more true that the pure air of the country or the distant seaside restores the invalid to strength and health, than it is true that foul air and general uncleanness weakens the body and mind, and eventually shortens the life of the sufferer. Individually, then, we have each our obvious duties to perform, and, collectively, it is also our duty to be all agreed in forcing our representatives, whether Parliamentary or Corporate, to perform one of their most important duties.

The ailments of the people, whether they be food or drink, need careful analysis and supervision as to their qualities. Adulteration is, therefore, a great evil, whether it be innocuous or not. Adulteration is a cheat even where it is not dangerous or poisonous, and as such it should be visited with a penalty. If the poor are called upon to pay for the impure article what they should only be charged for the pure, there is a manifest injustice, and it becomes an extortion when the seller knowingly vends it. In the question of public health, there are a variety of important interests involved, which are all, in a measure, contributing to the successful administration of sanitary laws, and none of which can be rejected without danger to the community.

The progress of sanitary reform in Great Britain has been slow compared with the uprise and development of other reforms; and the class of professional men, who, from their position, ought to have been the first in the ranks, have been the last to throw their weight into the scale. We do not underrate the intelligence and power of our medical brethren, and we are fully conscious of the abilities they can bring to bear upon the question of public health; but we deplore the lukewarmness and positive inaction that characterised the profession for some years in the early struggles for sanitary reform. The medical body are now nobly coming to the front, it is their duty; but we fear there is a spirit observable among some of them that partakes more of professional ambition than an unbiased desire to assist in a great reformation. Of course we know that it is scarcely possible to find in society, as at present constituted, any interest standing alone, and that with professional bodies, as with private individuals, self-interest and self-preservation is a primary law.

This brings us to the subject of sanitary

legislation, sanitary control, and supervision. With all our public health acts of the last twenty years, sanitary matters are still woefully behind in regard to the supervision of nuisances and their removal. No one act is sufficient, in itself, to carry out the precautions necessary to be adopted in towns and cities. Nuisances in number may, and do exist, and before the law can be enforced, a battle between contending lawyers has to be fought to the deep scandal of our administration, and to the injury of the community. One act confounds another instead of supplementing it, and six or seven acts have to be debated in detail before a clear view can be obtained of the object of the law in question. While the laws respecting the public health remain in this confused and deficient state, it is impossible to expect that sanitary reform can be carried out, for it is indispensable that the law should be both clear and stringent in its provisions, so that offenders should meet due punishment for its violation.

With a well-digested sanitary code, the personal health of the inhabitants, and the public health collectively could be attended to, and works of sanitary engineering projected to meet the obvious wants of the future. Sanitary engineering is only in its infancy, yet we owe to the architect and sanitary engineer for the last few years a great deal more than we do to the application of the laws, for unfortunately the acts in regard to sanitary matters would seem to be framed more with the object of frustrating the labours of the sanitary engineer than for the purpose of empowering him or assisting him to carry out works for the improvement of the public health. If a popular cry be needed, there is not one more meet than "Sanitary Reform." It must not, however, be a mere shibboleth—a party catcall—but a universalecho on the part of the whole population, irrespective of creed or party. Thrones and sceptres have been dashed to earth, monarchs trampled down or hunted into exile, and nations decimated under the gory banner of war, and all for an idea. The public health is not an idea but a tangible fact that is worth fighting for, yea dying for, but not through the instrumentality of the bloody weapons of war. "War to the knife," to use a metaphor, should be declared against dirt and uncleanness in every form—war to the uttermost, until the last living germ of disease is stamped out from the homes and habitations of men, stamped out as vermin are stamped, stamped out as absolutely as malefactors upon the block and gibbet are stamped out. Let there be no treaty or truce with dirt and filth; let not wealth or influence bar the way, or purchase an immunity for evil doing at the cost of the many. Even the pleadings of poverty must not be allowed to stand in the way where nuisances exist. The poor may fall through want to do what is necessary, but when this fact is ascertained, local authority must act, not try to shift from its shoulders what has devolved upon them.

Our city is in a bad state, because the obvious duties of its rulers are neglected; and where rulers are negligent, the ruled are negligent, and both are likely to grievously suffer. Attention to the public health and works of sewerage, drainage, and nuisance removal, wherever properly carried out, have reduced the death-rate in a wonderful degree—scarcely believable, unless we compare the

present returns of mortality with those before any sanitary precautions were adopted.

These are sanitary considerations that should be carefully weighed. Let our readers and citizens think over them, and act accordingly.

THE DEVELOPMENT OF OUR TURF INDUSTRY.

FIFTH AND CONCLUDING NOTICE.

BEFORE drawing these papers to a close, we wish once more to impress upon the minds of our countrymen particularly, and the inhabitants of the British Islands in general, the deep importance of the peat question, and the necessity that exists for developing, without further delay, our large peat resources, and making the industry a great national one. There is no doubt that if native capitalists do not engage in the industry, foreign ones, now that they have found out its importance, will do so; in either case this country must be benefited. What may yet grow into a rich and powerful company is now formed in London under the title of "The Peat and Charcoal Company." Several influential names are among the directors. The manufacture will consist of making, without compression, peat coal, having nearly the same density as pit coal. Peat charcoal will also be made by an improved process, and it is believed the production of the latter will be far superior to any other charcoal or coke.

The peat coal and charcoal will be manufactured according to M. Challeton de Brughat's process. It is proposed that the first manufactories will be established on the borders of Wales in Shropshire, and afterwards in Scotland, and this country. We are sanguine, if the company is judiciously managed, the concern would in a few years grow into a most prosperous one. The high price of coal and, as a consequence, iron, renders it absolutely necessary that the peat question should be made the question in an industrial sense. We see by an announcement in our contemporary *Iron*, that an important discovery has been made by Professor Scheerer of the Mining Academy of Freirburg. By this discovery a new light is indeed thrown upon the manufacture of finished iron. The Professor recommends for the removal of phosphorus from pig iron during the puddling process, that chloride of calcium and sodium, in equal parts, be formed together, and introduced into the puddling furnace in the proportions of about three times as much as the phosphorus contained in the iron. The phosphorus and the chlorides combine, and are removed in the slag. We consider this discovery a most valuable one in more ways than one, and in relation to our subject it has a considerable importance. One of the principal objections hitherto urged against peat and preparations of peat for smelting purposes has been the presence of phosphorus in large or small quantities. "If the elimination of phosphorus (says our contemporary) is reduced to the simple process described, its presence in such pig iron as is intended to be subsequently 'finished' will become of minor importance, and the long predicted rivalry of peat with coal will at last assume a formidable appearance." There cannot be the least doubt of the fact, and when we consider the thousands of acres of peatland that exist in the British Islands, and particularly in this

country, there is room for the most sanguine expectations in respect to peat.

Returning to Mr. Meadows' little volume, we will take note of the authorities he mentions who have already, for some years, thrown considerable light on the history of the peat question. In 1860 an inquiry was set on foot in Prussia, and a Dr. Dullo was appointed a commissioner to carry out exhaustive investigation; at the expense of the state. He extended his travels over the Continent, and into Great Britain and Ireland. In 1861 a report of these investigations was published in Berlin by Gustav Bosselmann. The work is entitled "Torf Verwerthungen in Europa." It is one of the best reports upon the subject that has yet been issued, as it details all the nature, properties, and products capable of being extracted of commercial value from peat. The work reviews the system of Challeton in France, and that of Wiber and Exeter in Bavaria, and some others. In the same year a treatise was published by Challeton at Paris, entitled, "De la Tourbe." This treatise is confined mostly to details of the author's own system, and it is not as satisfactory as might have been expected, but since that time we are bound to add that Challeton's processes have undergone much improvement. In the United States the subject of peat very naturally attracted some considerable attention.

Professor Johnson, of Yale College, in 1866, published a handbook in New York, entitled, "Peat and its Uses." Professor Johnson holds the opinion that the effective heating power of peat is, indeed, considerably augmented by condensation, but that no mechanical treatment can increase its percentage of carbon, or otherwise alter its chemical composition, hence it must ever remain inferior to anthracite. Professor Johnson, however, could not, no more than others, anticipate the discoveries made since, one of which we have already mentioned. The objects attained by the condensation of peat, in the words of Professor Johnson, are "the bringing of more fuel into a given space, thus making it capable of giving out an intenser heat, at the same time increasing its hardness and toughness, and rendering it easier and more economical of transportation." He holds that in combustion in ordinary fires, the water of the fuel is a source of waste, since it consumes heat in acquiring the state of vapour. He holds that oxygen is a source of waste, for heat, as developed from fuel, is chiefly a result of the chemical union of atmospheric or free oxygen, with carbon and hydrogen of the combustible. The oxygen of the fuel being already combined with carbon and hydrogen not only cannot itself contribute to the generation of heat, but it neutralises the heating effects of those portions of the carbon and hydrogen of the fuel with which it remains in combination. He also says nitrogen and ash are practically indifferent in the burning process, as they simply impair the heating value of fuel in as far as they occupy space in it, and make a portion of its weight to be exclusive of combustible matter.

The handbook of Professor Johnson is accounted an honest and useful text-book on peat by Mr. Meadows. We may mention here that the work alluded to contains chapters on the agricultural uses of peat, and is illustrated with engravings of several peat-producing machines. The work of Mr. Leavitt, of Boston, entitled, "Facts about Peat,"

is the work of an inventor of one of the American machines for making dense turf, already mentioned in former papers. The volume is inferior in practical value to the preceding. One of the latest treatises on the peat question is that of Ernest Bosc, entitled, "Traité Complet de la Tourbe," published in Paris in 1870. It demonstrates the value of producing moulded peat on Challeton's principle, with some modification in the mechanical working. The cost of moulded turf, according to Mr. Bosc is as follows, per pile of 20,000 bricks:—

Extracting, mixing, and moulding of 20,000 bricks, at contract rate of 1s. 8d. per 1,000	£1 13 4
Heaping into pile	0 2 6
Cover or thatch	0 3 4
General expenses	0 13 4
	£2 12 6

Each pile is stated to be in weight about six tons, which would show that moulded turf, according to the figures given, would cost from eight to nine shillings per ton. Mr. Bosc's volume may be said to describe the system at present in operation in France for producing marketable peat, and in the matter of charcoal.

The literature of peat is extending every day in America, on the Continent, and in Great Britain. In Germany there are several technical and professional journals devoting articles to the subject, and in the professional architectural and engineering publications of London in the course of the year several notices appear in further exposition of the commercial and national importance of peat. In Ireland we are glad to see that our journals, and some of our professional men are directing attention to these vast resources which are lying nearly waste under our feet, while hundreds of our people are but half employed. Respecting some French turf-cutting implements, Professor O'Reilly, of the College of Science, Dublin, drew up a report, published last year. The farming and gardening journals of this city have also assisted in the matter of devoting articles to the question of our turf resources.

Mr. Meadows has performed honourable and important labour in the production of his little work, the gist of which we have summarised in our preceding notices. Although we differ from some of Mr. Meadows' conclusions in regard to the manufacture of turf for the market and for all general wants, and are not disposed to think that the ordinary methods of producing turf can at all be depended upon for any great supply, yet we are conscious of the value of rightly-directed ordinary methods when not subordinated to other employments.

In the combination of the mechanical and the manual, machine and hand labour, both the domestic and the manufacturing wants of Great Britain can be amply provided for. As long as we are dependent for our supply of pit coal from sources outside our own shores, manufactures in this island must be placed at a great disadvantage, and, unless in some exceptional instances, we can never successfully compete with foreigners. All our industries are dependent upon fuel; and when we think on the enormous consumption that takes place every day for steam driving, gas lighting, and household purposes, we can have little hope that a reduction to any appreciable extent will take place in the price of coal favourable to the opening up of new industries in this country. Although our coal-fields are small compared with the sister kingdom, yet it would take a consider-

able period of time to exhaust them if once opened, and coal mining was carried on here *pari passu* with peat manufacture.

A little more native energy, capital rightly directed, and systematised efforts concentrated in the development of even one-third of the 3,000,000 acres of bog land in this island, would create a special national industry that would make this country happy and prosperous, and revive many branches of her former trades and manufactures.

THE CONGRESS OF THE BRITISH ARCHEOLOGICAL ASSOCIATION.

THE thirteenth congress of the British Archaeological Association, which began on the 18th ult., at Sheffield, and lasted for the week, has been a most interesting and productive one. The Corporation appears to have performed its offices in a most praiseworthy manner. The members of the Association were received in the Cutlers' Hall by the local authorities, and the Town Clerk commenced the proceedings by reading a hearty congratulatory address "To the most noble Henry Duke of Norfolk, the president and other members of the British Archaeological Association." The Mayor (John Fairburn, Esq.) supplemented the address in a short speech, and added a hope that the townspeople would have frequent opportunities of seeing his grace.

The Duke of Norfolk briefly thanked the Mayor for the welcome they had given the association. Even in a busy town like Sheffield there was much to preserve from forgetfulness in its old history, and if they looked into the old remains of ruins around they would find many in danger of becoming lost or destroyed. He felt sure that the association would be received in a very handsome way by the town of Sheffield, and he had not been disappointed, and the pleasure he felt in meeting the association was thereby enhanced.

Mr. Gordon Hills, the hon. treasurer, then thanked the Mayor on behalf of the Council, and the real business of the meeting commenced by Mr. Hadfield giving an explanation of some drawings and ground plans of Sheffield Manor which were on the walls. The meeting then adjourned to the parish church.

The Shrewsbury Chapel in the parish church is the only point of interest in the edifice, which is a mere reconstruction on a Norman site of the old church. Beneath a panelled canopy were the effigies in bronze of George, fourth Earl of Shrewsbury, and his two wives—Anna, the daughter of Lord Hastings, and Elizabeth, daughter of Lord Richard Waldron. These effigies are said to be the finest in England. The earl died in 1638, and his wife Elizabeth survived him for some years. The great mural monument to Gilbert was also examined, but Mr. George Godwin thought they might improve the occasion by protesting against the erection of great mural monuments of such a worldly character. An altar tomb in the centre of the chapel was the subject of much discussion between Mr. Stacey and Mr. Planché, for though it is known that it was erected at a cost of £20 in 1585, it was not known to whom it was erected. The Rev. Canon Sale, who described the monument, suggested that it was erected as a slight to "Bess of Hardwick," who was a strong-minded female of the period, and her husband erected this to the memory of another wife. Mr. Planché thought it was erected to the memory of the first wife and her children from the armorial bearings. No one could give an authoritative reply to the query as to whether the bust of the Rev. Mr. Wilkinson was really Chantrey's first bust, but subsequently Dr. Alfred Gatty gave satisfactory proof that it was so. A subsequent monument of Chantrey's was then glanced at, together with some curious carved work which Mr. Fairless Barber pointed out. The party then proceeded in

carriages to visit the ruins of Sheffield Manor, about two and a-half miles from the town. The restoration of Queen Mary's Tower will mark the visit of the meeting. The square tower with turret was one from which the unfortunate Mary Stuart witnessed the hunting and other sports. The rain now began to descend so that many of the visitors did not stay to inspect the fine timber gable at Bromhall, the residence of Mr. R. N. Philipps.

At half-past seven o'clock the Duke of Norfolk entertained the congress at dinner at the Cutlers' Hall; covers were laid for 220. Speeches were delivered by Lord Houghton, the Duke of Norfolk, George Godwin, F.R.S. (*Builder*), Mr. Gordon Mills, Mr. R. N. Philipps, the Master Cutler, Mr. G. Wright, F.S.A., and Mr. Robert Merriman.

On Tuesday the members of the congress visited Beauchief Abbey, Mr. Gordon Mills giving an interesting description of the building, which has been described by Dugdale as a priory. Workop Priory was also visited the same day, the Rev. J. Stacey giving a full account of its history. Steetley Chapel, an interesting Norman structure, attracted a good deal of attention, and after its history was gone into a resolution was carried, on the motion of Mr. Godwin, that the little relic which is now in ruin should be roofed and otherwise preserved. A visit was afterwards made to Thorpe Salvin, to examine a Norman font.

At the first evening sitting, Mr. J. R. Planché, *Somerset Herald*, read a paper on "The Early Lords of Holderness," followed by the Rev. Dr. Gatty with a paper on "The Town and Parish Church of Sheffield," other members taking part in the discussion that followed.

On Wednesday the Saxon church of Loughton-en-le-Morthen and the ancient earthworks were visited, the congress afterwards proceeding to Roche abbey, Mr. Gordon Hills giving a good description of the building. The old monastery consists of a gatehouse erected in 1225-40, and the east side of the transept in 1147.

On Thursday Kirkburton was visited. Here Mr. Fairless Barber challenged the association to produce an earlier document relating to the pew question than the one he held in his hand. It was the award of certain Kirkgreaves of Kirkburton on the complaint of certain women as to their right to kneel on certain "forums" near certain piers in the parish church near their "mens." The rights claimed were affirmed in October, 1490. The west door is Early English. Mr. Barber, architect, gave it as his opinion that the door had been removed from another position, from certain indications in the work which he explained. Fragments of a sculptured cross were here examined. The head of the cross has carved arms, terminating in an angular-shaped shaft, which is surrounded by a plain half-round bead moulding. The head of the figure and the limbs have been chipped off, but it is obvious that the figure has been represented with four nails, and with the head is upright in a state of repose, marking its early date. The lower part of the cross has some interlaced work, similar to that which is so characteristic of Irish crosses. No attempt was made to fix the date of this interesting relic, the discovery of which has not before been made public. A somewhat remarkable square-headed piscina and a "squinet," or hagiocope, in the place of a "bow window," with the obvious remains of a seat and a pent-house, gave this the appearance of being a real leper's window, of which antiquarians and ecclesiologists have heard so much. Kirkburton is situated in a district the history of which has yet to be written. Its history was the history of the growth of parishes, and the researches of the Rev. Joseph Hunter had shown that it was a fallacy to suppose that this and the neighbouring parishes were subject to Dewsbury. They only paid a small sum in lieu of tithes out of a certain portion of the land. This was a church of the royal demesne, and followed it and other manors into the hands of

the great Earls of Warrene. The Earl of Dartmouth, ex-president, met the party at Woodsome Hall, and showed the party over the old mansion. Almondbury was next visited, where the church is in process of "restoration"; and then Castle Hill, where the footprints of the early Britons were traced. At Armitage Bridge Mr. Thomas Brooke, F.S.A., received the entire party and entertained them in a princely style. Some interesting objects were examined here, and in the library several rare tomes were examined. At the evening meeting there was a good attendance. A fine collection of illuminated manuscripts from the collection of Mr. William Brogge was exhibited and the leading features pointed out by Mr. W. G. Birch, after which Mr. J. A. Roebuck, formerly M.P. for Sheffield, spoke a few words.

On Friday the members of the Association visited Cenisborough and Tickhill. An unfortunate accident occurred to one of the carriages conveying the party, through which the occupants were somewhat injured. At Doncaster a portion of the party was entertained by the mayor. In the evening a paper was read on "Rotherdam and its church and colleges."

On Saturday the Association visited the den or cave at Wharnccliffe, made famous by the ballad of the Dragon of Wantley. Mr. Llewellyn Jewitt read a paper on the subject of the tradition. The majority of the party on this day visited the church of Rotherdam—an interesting structure, which was well described by Mr. Guest. Mr. George Wright read a paper on the Duke of Norfolk, who was beheaded for his love of Mary Queen of Scots. Saturday brought the general programme of the congress to a close, but on Monday there were several visits made on the part of small parties and of individuals to several noted places of interest in the district.

The above is but an outline of the proceedings of the congress, which embraced numerous visits, and the reading and discussion of many interesting papers of archaeological and antiquarian interest, some of which we may give hereafter *in extenso*. On the whole, the thirteenth congress of the British Archaeological Association may be pronounced a successful one.

TENDERS.

For the re-roofing and re-pewing of the Parish Church of Drumbo, County Down, Mr. W. J. Watson, C.E., architect, Newry:—

M'Cullagh and Bennett	£852
Lennon and Millan	582
M'Keown	552

For stores, &c., in Belfast, for Mr. W. Gregg. Mr. W. Batt, jun., architect; quantities by Mr. Henry M'Connell:—

Smith	£1,740
Collen	1,650
Corry	1,544
M'Cracken	1,490
J. and R. Thompson	1,475
M'Master	1,475
M'Cammond	1,470
Mansell	1,456
Thompson	1,429
Courtney and Carlisle	1,352
Colville	1,375
Carson	1,355
M'Keown	1,350
Moore	1,350
Gulter	1,348
Dixon and Co.	1,250
Hunter (accepted)	1,125

For stables, &c.:—

Hunter	£340
Mansell (accepted)	312

For manse in M'Clure-street, Belfast. Mr. W. Batt, jun., architect; quantities by Messrs. Fetherston H. and Banks:—

For double house:—

Moore	£1,432
Hunter	1,188
Corry	1,185
J. and R. Thompson	1,150
M'Cracken	1,135
Mansell	1,050

For single house:—

J. and R. Thompson	£1,115
Moore	986
Hunter	960
Mansell (accepted)	905

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

THE MALL.

"LET us walk down the Mall," was a common expression once on the meeting of loungers and lovers when the New Gardens on the North of the Liffey was the great place of attraction. We have conversed with octogenarians upwards of thirty years ago, who gave us pastoral pictures of what has since been called the finest street in Europe, and not unjustly, though pinchbeck architecture has done much to debase and destroy what might have remained a beauty and a joy for generations to come. The octogenarians of our youthful days of the claret-colour swallow-tails, broad-brimmed beavers, flowing frilled shirts, buttoned knee-breeches, varnished Hessians or silver-buckled shoes and yellow gaiters, were a rare old race of homely and upright gentlemen. They had faults, to be sure, and modern ways stunk in their nostrils. The chivalry of duelling had not died out of their hearts, and the good broad-sword and the pistol were with them still the queens of weapons for snuffing out a lie or a life that tainted their honour. Apart from their prejudices and eccentricities, their word was their bond, and their benevolence and hospitality was sufficient to absorb the multitude of their venial sins. The features of a few of them flash now and again on our mind's eye as they walked the Mall in a costume long out of date. To the shopkeeper standing at his door, and the mendicant in the street channel they were well known, and the respectful tokens of recognition were returned as graciously as they were given. From the lips of these gentlemen of the olden time the traditions of the Mall and its associations were to be heard; and if personal reminiscences got mixed up betimes with floating and fading tradition, the young hearer could well excuse the aged narrator through the enjoyment he received in communing with the past through one of its veritable representatives. Oh! what has not the present age lost through the neglect of the glorious gift of memory! Young minds are crammed with mental pabulum as stomachs are overloaded with food which they can neither digest nor use for their own enjoyment or that of the world. Years, and months, and days and dates, events and occurrences of a few short years back are unremembered now by the many, and the almanack or library have to be referred to for what the memory should supply without fail. The recollections of aged men in these days are bald and barren even when they are not almost a blank, and thus posterity will lose one of the greatest charms and enjoyments that was inseparable from the lives and characters that moved in the past.

Whether the Mall had trees once growing on either side, like the Parisian boulevards, of our own memory we cannot tell, though we have heard it stated by aged men in our youth. No view of the street that has met our eyes furnishes us with the proof, though trees and meadows undoubtedly existed early in the last century where the Mall now stands. Trees and thatched houses, paddocks and market gardens, dairy farms and orchard plots, quoth one old friend, existed in the memory of my grandfather. Oh yes, he continues, grandfather remembers them well, as also the "Barley Fields" near Mountjoy-square, and the "Brick Fields" contiguous to Great Lying-inn-street. We do not doubt our friend in the least, for we find even in the "New Plan" of Dublin, by Samuel Byron, the City Surveyor in the days of the Irish Parliament, that Brickfield-street and Brickfield-lane are marked down. These matters, however, carry us back to times to which our own memories extend not, so we will remit the further tracing out of them to the care of the "Oldest Inhabitant," whose recollections of the Mall and its belongings, are, no doubt, interesting.

"The Mall, sir, when I knew it first, was, for the greater portion, a noble private street of princely mansions. My father, whose age exceeded mine, and whose memory was far superior, remembers the opening up of the street, and the improvements that preceded and succeeded the erection of Gandon's Bridge. He was very fond, like myself, even in his old age, to toddle down the Mall both in summer and winter when the nobility were leaving and coming back to town. Grand equipages were to be seen in the street at these times, and the business of the sedan chairmen was a flourishing one. Families from the north and west passed along here with their retinues to their several abodes in the contiguous streets, and along the quays towards Essex Bridge. The coach-making and cabinet-making trades, sir, had reason to regret the events that caused the withdrawal of resident nobility and gentry from this portion as well as other parts of the city. All kinds of vehicles to suit the tastes of the people wheeled once through our streets—coaches, chariots, hackney-carriages, private and public jaunting cars, open landaus, post chaises, noddies, and other nondescript varieties. Sunday and holiday the whirl and din were kept up with dashing riders, and postillions, and smashing drivers, and dare-devils who could 'move on' faster than any modern man on the beat could order them. From the conduit at the head of the Mall, off many of the holiday-seekers went; this way to the 'Sheds' and that way to the 'Beds,' more for John's Well, and others for Leixlip Spa, while horsemen and pedestrians past number faced the cardinal points of their fancy, and struck off astride pony and ass or perforce on 'Shanks' mare,' when the livery stables could oblige no longer for love or money. The public buildings and hotels and clubs of the Mall are the creation of the present century—they have grown up, sir, since I left school. As soon as the shops and hotels began to appear, the nobility and gentry commenced to disappear.

"At the close of the last century several titled and professional personages of note resided in the Mall, a few of whom I recollect. Let me see: first, there was Lord Chancellor Lifford (James Hewitt), the Earl of Drogheda, Knight of St. Patrick (Charles Moore), the Earl of Westmeath, ditto (Thos. Nugent), and the Earl of Ross (Ralph Gore). Among the viscounts were John Netterville, Archibald Acheson, and Nicholas Ward. The titles, sir, you will easily find out on reference to Sir Bernard Burke's volumes. Then of barons or lords there were a few also—Molyneux Shuldham, Lord Leitrim, of Manorhamilton (Robert Clements), Lord Sunderlin, Richard Malone. Of Irish M.P.s, at different periods, the Mall could also furnish a number of residents. Of the Irish Parliament there resided—R. H. Hen Clements, Hon. Edward Ward, R. H. Edmond, Sexton Perry, Hon. Denis Browne, Gervas Parker Bushe, Thomas Burgh, William Burton, Henry Loftus, Captain Loftus. Of legal worthies, among others, there were—Hon. J. Browne, Prime Sergeant, George Hamilton, third Baron of the Exchequer, and J. Godley, one of the Examiners in Chancery. There were also some noted physicians and other professional gentlemen—Archibald Richardson, the Surgeon-General, W. Barry, the Keeper of the Records in Birmingham Tower, and L. E. Morris, the Treasurer of the Irish Post Office.

"This street, you see, saw bright days in the history of the unknown city, both before and after its name was changed in honour of the family name of an LL. once popular here. I am unable to say whether the old game of mull or mawl was ever played in Dublin, or whether this street derived its name from that pastime, which might have been practised on the open spaces that once existed out and about this quarter. It is an English game, and it is possible that it was played by some of the retinue or supporters of the Viceregal Court. The game of maul was played by striking a box-ball with a stick, or mallet, or maul through a ring or arch of iron, one of

which stood at each end of an alley, and whoever could do it with the smallest number of blows was declared the victor; it was a fashionable game in London in the reign of Charles II. The street known as Pall Mall in London is said to have derived its name from the game being once played there. The word Mall is still applied to a public walk, or a broad level shaded promenade, and streets and public places so called are to be found both in the North and South of Ireland.

"Early in the present century there were current many strange stories of personages who resided in this street, and met for purposes that neither law nor morality sanctioned. Aristocratic homes became the head quarters of court intrigues, and secret clubs, it was said, were formed to carry on orgies at which devils might well tremble as well as angels weep. I will forbear, however, sir, to rake up from the dark corners of tradition or the cobwebbed archives of crime and scandal unsupported assertions—'tis better, by far, to let them rot out of mind as they have rotted out of sight with the characters whose names invested them with an unholy interest. Despite of a few blemishes, the Mall will live and furnish in the future, as it furnished in the past, records of which posterity will feel proud.

"The modern importance of the Mall commenced in the last decade of the eighteenth century, when Gandon Bridge was completed, and formed a fitting sequel to the works of an architect who gave our city a courts of law and a custom house worthy of the architecture of Rome or Athens. Passing over the minor public erections, next followed the Admiral's Pillar, and the chief central postal buildings, on which the genius of a native architect was exerted. When shall we have a statue erected to Francis Johnston, to whom the unknown city owes the establishment of the Academy of Arts, which, if the nobility and gentry of Ireland had done their duty towards its students, might long since have been raised from a region of comparative eclipse into a region of light? Johnston's portico is little inferior to Gandon's. Look at that noble pediment, supported by those six massive Ionic columns, and surmounted by three finely-executed statues emblematical of Hibernia resting on her spear, harp, and shield; Mercury with her caduceus and purse; and Fidelity, with the fore-finger of one hand on her lip, and a key in the other. The tympanum shews the Royal Arms, and the balustrade around the top of the building gives a classic and artistic finish to the whole. Johnston, sir, as well as James Gandon, exerted his utmost to develop and draw forth local and native talent. Poor Edward Smith found true friends in the persons of both architects, but powerful and prejudicial influences thwarted the generous intentions of noble-minded men, and compelled them to mourn over vicissitudes and forced inaction and drudgery betimes of a sculptor who might have been the Phidias of Ireland.

"The Admiral's Pillar is scarcely ornamental as it stands. Many have been of the opinion that if another block of buildings similar to Johnston's design, flanked the opposite side of the Mall, the pillar would look more ornamental to the thoroughfare. Johnston's work is, as you may see, built of native chiselled granite, with the exception of the portico, which is composed of Portland stone. The Earl of Whitworth laid the first stone of this structure in the year of the battle of Waterloo, and it was finished in 1818. A bust of the viceroy may be seen within in one of the board rooms. Centralization has been for years at work within this building. Previous to 1831 we had two post-masters-general in this city to conduct our postal duties, but the machinery work is now done by a system of circumlocution of wheels within wheels, and passes and re-passes across the Channel. The opens and arcades under the portico that existed in the building as it left the architect's hands have been vandalised of late years. Architectural beauty and harmony are butchered and

boxed up, and the shades of Gandon and Johnston are ruthlessly desecrated.

"The architect of the Pillar was William Wilkins, an English architect. He was author of some works on his profession, as well as the architect of several public buildings in London and elsewhere. The Pillar was not a happy conception. Wilkins was born in 1788, and died at Cambridge in 1839. His 'Remarks on the Buildings and Antiquities of Athens,' and his edition of the 'Civil Architecture' of Vitruvius are generally known to the members of his profession in the sister kingdom.

"In the mail coach days, or rather the Mall coach days, the circuit of the pillar presented an animated scene. Here the citizens were in the habit of congregating between six and seven, or at later hours in the evenings to watch the starting of the coaches from the court-yard of the circumlocution office. As the bugle sounded, out wheeled coach and horses, bag and baggage, amid huzzas from the crowd; quick curled the driver's thong, and louder blew the guard's bugle, as forward, right and left, dashed the royal teams on the Broadway upward to the North or downward to the South. The last coach was awaited for with as much excitement and curiosity as the waiting for a verdict, before the crowd dispersed and wended their way to their respective homes. Strange sights and scenes were to be witnessed betimes from the stand-point of the Pillar. These were the days when the name of Peter Purcell was a household word in many homes, as well as a prominent figure in public celebrations, agricultural shows, and farming societies. Peter, for many years, had the contract for supplying the horses for her Majesty's mails; but a few years before the coaches ceased to run, and while the construction of the railways was being prosecuted, the contract for the horses passed out of the hands of Peter into the hands of an Scotchman named Croall. Some foul play had been suspected, and as Peter was a great favourite with the people, on the first evening that the coaches started under the new contract, a body of workmen, helpers, and outsiders made a rush at some of the coaches and unhorsed them. Matters looked threatening for some time, and the authorities were called upon to interfere. It was late in the evening before the last of her Majesty's mails left the city on that memorable occasion, and precautions had to be adopted to prevent a repetition of a more serious disturbance.

"The recollections of the Mall are crowding back on my memory, sir, the more recent as well as the more remote, so I fear I will have to postpone the recital of the other events of this street, its institutions and clubs, and the clever literary worthies who once walked the flags here, until we can make another visit to the olden haunts and homes of this rare old Mall."

Agreeing to the suggestion of our faithful companion and guide, we both retired and had some refreshment, and, after a warm shake hands, bid "good evening" to the "Oldest Inhabitant."

THE IRISH SOCIETY IN DERRY.

In connection with the visit of the (London) Irish Society to Derry this year, which composed a deputation of several members, headed by Sir Sydney Waterlow, the Lord Mayor of London, and the newly-elected governor of the society, a few items may be mentioned. Some twenty or thirty leases, we understand, granted on lives fallen in by the death of Lord Londonderry were renewed in accordance with the altered state of the land laws. The Corporation of Derry were anxious that the society should build them a new Town Hall, but as that would involve a large outlay, the matter was shelved. Culmore was visited, and arrangements made for improving the ferry there. Several visits were made to places where the property of the society was situated, and some few applications from tenants and others were granted. In respect to the re-

newal of the leases, they are granted for thirty-one years instead of on lives, as formerly. The principal tenants on the estates, or rather a number of them, were entertained by the deputation, and some arrangements were made in regard to fishing and the cultivation of oysters. The fishing lessees of the society reported favourably of their success. After a pretty good round of visitings and festive gatherings, during which the deputation did not neglect the interests of the society, leave was taken of Derry.

We are free to add that the "Irish estates" are better managed than formerly, but, at the same time, the date cannot be distant that will bring a great change to the tenure and management of the property of the "Irish Society" in Londonderry, and we hope for the better.

TALL CHIMNEYS.

THE city of Glasgow can boast of two remarkably high chimneys. The following are the dimensions, according to the *North British Mail*, the figures being furnished by the two proprietors in question:—

Dimensions of Tenant and Co.'s stalk, first erected:—

Total height	ft.	in.
From surface to top of cope	455	6
Outside diameter at foundation	50	0
Ditto surface	40	0
Ditto top of cope	13	6

Dimensions of Townsend's stalk:—

Total height	468	0
From surface to top of cope	454	0
Outside diameter at foundation	50	0
Ditto surface	32	0
Ditto top of cope	12	8

Messrs. Townsend's chimney is, therefore, higher by 12 ft. 6 in., but as it stands on lower ground than the other, Messrs. Tenant's stalk appears higher to the spectator. People who have never looked on these stupendous evidences of Glaswegian enterprise, may find some food for thought in the speculation that they both start from bases wider than the majority of circus rings, and after rising to the altitude of three ordinary church spires are still as wide as a railway carriage turntable. On a clear day they can be seen from places fully twenty miles away.

A MODERN TRADES PAGEANT.

A TRADES demonstration and procession took place on Saturday, the 23rd ult., in Edinburgh, which, apart from its political features, reminds us much of the old trade pageants of Dublin, which used to take place at the "Riding of the Franchise," and on other occasions. The object of the Scotch demonstration was to protest against the Criminal Law Amendment Act, and to shew that the trades of Edinburgh declared unanimously in favour of its repeal. The representatives of the various trades, assembling at numerous places of rendezvous, marched, with bands playing and colours flying, to Bruntsfield Links, on the south side of the city, where they were marshalled in order of procession. The number of tradesmen taking part was, as nearly as could be made out, about 14,500, as compared with about 18,000 who marched in the Reform procession of 1866. On leaving the Links, the procession, which bore numerous trades' flags and emblems, as also a variety of mottoes and devices expressive of hostility to the Criminal Law Amendment Act, marched by the route of Hope-street, Earl Grey-street, Lothian-road, Princes-street, Cockburn-street, High-street, and Canongate, to the Queen's Park, where the speeches were delivered. Twelve o'clock was the hour fixed for the start from the Links, but the heavily-freighted trains had been late in arriving, and numerous other delays occurred in the marshalling of the trades, so that it was only by unceasing energy and activity on the part of the various "generals in command" that at half-past twelve the van of the procession was set in

motion, and began to file out of the field at a good round pace, to the deafening music of thirty-six brass and fife bands and four bands of pipers. First came the carters, astride heavy Clydesdale horses, gaily caparisoned with ribbons, while the riders wore broad Scotch bonnets of enormous circumference, and with portentous red tops. The members of the trades committees followed, and after these leaders streamed cabinetmakers, painters, plasterers, blacksmiths, and other handicraftsmen, preceded by their bands, and bearing proudly aloft the emblems of their trade. In these flags and other insignia a great deal of labour and capital had been expended, and apparently not a little ingenuity and fancy. One craft seemed to have a taste in floral devices; that following would show a *penchant* for cunningly constructed models of its special handiwork; a third was strong in many-coloured and emblazoned flags; others testified on their banners to the hot zeal against the obnoxious act with which they were animated; in another part of the procession was displayed a talent in making punning allusions to the statute; while still others contented themselves with the effect which their close and numerous array was calculated to produce. At the front of the blacksmith detachment was a large wagon, the leading horse attached to which was appropriately bestrode by a veritable blackamoor, while inside were three or four brawny smiths, surrounded by all the implements of their trade, the merry clang of whose hammers, as they forged horse-shoes all along the route, could be heard far above the din of brass band and cheering multitude. Similarly borne was a printing-press, which was indefatigably worked in turning off sheets containing poetical appeals to the working man to assert his rights, but which came ridiculously far short of supplying a copy to one-tenth of the eagerly outstretched hands which surrounded the wagon from starting point to finish. Perhaps the greatest share of public attention was engrossed by the representative of King Crispin, who, clad in antique armour, and supported by two heralds, rode at the head of the Cordwainers' Corporation, ill at ease, if appearances were to be trusted, with his charger, his clattering suit of mail, and the demonstrations of delight and admiration which his remarkable *tout ensemble* excited from spectators of tender years, who kept perseveringly close to his flank throughout the entire journey. One of the features of the procession was the large number of well-dressed and well-looking females—the wives and sweethearts of the demonstrators from a distance—who marched either in the ranks or alongside of them. Along the line of route a vast throng were congregated, who not only filled up the streets from side to side, except the narrow lane in the centre left for the processionists, but choked up every window, crowded every housetop, and clung to every lamp-post and other coign of vantage which overlooked or in any way commanded the line of route. It is estimated that there were 150,000 persons in the streets. The demonstrators immediately on their arrival in the park were ranged round four platforms which had been erected and from which they were addressed for about an hour by the leaders in the movement among the Scotch trades against the act referred to and other similar laws bearing on the relationship between master and servant which have recently been passed.

The old trade processions of Dublin in the last century, when the minor guilds of trade were in full power, were interesting sights. Early in the present century there were some very large trade demonstrations, but when the "trades walked" it was mostly in favour of some political object. The last large trades pageant in Dublin of any note was that which took place in 1843 on the occasion of the monster meeting held at Donnybrook by O'Connell. Subsequent ones were of a minor kind, and were bald and meagre, and the banners and insignia of the crafts were scarcely more than a shadow of their whilom splendour.

MESSRS. GUINNESS'S NEW BUILDINGS.

SOME buildings intended to be auxiliary to the large brewery works at James's-gate are in course of construction for Messrs. Guinness, on the ground alongside what was formerly known as the Military-road, opposite the Royal Barracks. A daily contemporary has furnished some particulars which we summarise without vouching for their correctness in detail. There will be an underground tunnel communication between the new premises and the old, so that but little difficulty will be caused by the two establishments not being immediately adjacent. The tunnel will run underneath James's-street, and, besides being used as a communication with the new works will connect the brewery by a tramways with the quays. The buildings in process of erection will consist of a racking store, a malt-house, and a cooperage, all on a very extensive scale. The tunnel will be 70 yards in length, the excavation being 19 ft. wide by 22 deep. Its top will be 18 ft. below the surface of James's-street. The approach to the tunnel will be open, and 200 ft. in length. Owing to the high elevation of the brewery, the descent there into the tunnel will be about 29 ft. At the opening of the passage there will be two sidings to act as lie-bys for trucks. The latter will run to and fro on tram lines, and at either end there will be an hydraulic lift capable of raising one truck and its load to the higher level. The trays on which the trucks will rise are to be fitted with rails, and these will correspond with the rails above, so that no delay will be occasioned in their removal once they have reached the top. The tramway, it should be stated, will be some 1,800 ft. long. The walls of the tunnel are being very substantially constructed; the retaining walls of the approach being 6 ft. in thickness at the base, and of hammered masonry. The cutting of this passage presented some engineering difficulties, but under the superintendence of Mr. Wilson, who has the entire charge of the works, they are being successfully overcome. Not the least of these difficulties has been the boring underneath a large circular house in James's-street which came directly in the path. At the entrance of the tunnel a large vat-house will be built to receive the porter on its way from the brewery to the racking rooms. It will be able to hold some 6,000 hogsheads of porter, and as each hogshead is worth £3, the storage here will be a pretty valuable one. The porter will be all conveyed to the racking rooms by means of pipes, which also will run through the tunnel. The new premises are divided into what might be termed two lots, by Cook's-lane, and this will be crossed by a lattice girder bridge at a level of 12 ft. After crossing this bridge we find the second hydraulic lift for raising the trucks to the level of the tramways to the quays. Here also will be the cooperage magazine, which will be 500 ft. by 800 ft. In it the casks will be received, washed, and repaired as they require. There will be steam-boilers, two powerful steam-engines, and a large chimney in connection with it. The brewery will be altogether relieved of the work of this department, thus giving greatly increased room and accommodation in the James's-gate establishment. The new cooperage will be able to wash between 4,000 and 5,000 casks in the day, besides manufacturing several thousands. The River Camac also runs through the grounds, and it will be crossed by four bridges—two for coals and two for casks. Fronting the quays will be the racking-room—the largest in the United Kingdom. It will be 500 ft. wide by 220 in depth, covered under one roof in eleven spans, and carried on iron pillars. The front will present an ornamental wall, with granite base, granite pilasters and cut-stone cornice. The office buildings will be in the centre, entered through an arch with cut-stone façade. The building proper will be of cut-stone to the height of 6 ft., the remainder being Athy brick, pointed with English red brick dressings.

Opening into the road will be two large gates, one at each end. The new malt-house to be constructed will be a very extensive one. It is, probably, an interesting fact to know that it will take 2,000 ft. of 5-in. piping to convey the porter from the brewery to the racking-room. There are 360 men engaged in their construction, and at the tunnel men work day and night in relays. So far is the advancement made in the latter, that it is expected to be complete in two months. The works, however, will not be in a state of completion till next summer. Notwithstanding many serious disadvantages in the nature of the site for building purposes, such as bad foundations, the irregular character of the ground, &c., Mr. Wilson has hitherto accomplished successful labour. The cost will, we understand, be about £90,000.

CIVIC LYRICS.—No. XLIV.

MULLINAHACK.

(Air—*Ballynahinch*.)

PLAGUE CYCLES—1204, 1348, 1462, 1525, 1575, 1604, 1650, 1739, 1832, 1849, 187*—THINK WELL ON 'T!

A certain wise Council, which all of us know,
In a deep-gutter'd city, where foul waters flow,
Resolved on Main Drainage just thirty years back,
And commenced operations at Mullinahack.

Dirty-lane was declared then the gem of the town;
Mud Island was left to shake hands with Mount Brown;
Stonybatter was stabbed in the ribs and the back;
And Black Pitts drew lots with Mullinahack.

King Cholera came, and he swooped thro' the Coombe,
And wherever he stopped he made elbow-room,
Till his presence was known by white plumes and black,
From Marrowbone-lane to Mullinahack.

In "Riding the Franchise" he kissed poor and rich;
He bathed in and drank from each sewer and ditch—
To prove to the many, who painted him black,
He could live, like themselves, at Mullinahack!

The Council still looked on while matters grew worse;
They slandered each other, and often did worse;
Till curses were heard of "the cold-blooded pack"
Who murdered the poor at Mullinahack!

Oh God, save the people and rescue the poor,
Who choke of the plague on door-step and floor.
King Cholera's strong in his lines of attack,
And Dublin may fall yet, like Mullinahack!

CIVIC.

ST. PATRICK'S CATHOLIC CATHEDRAL, ARMAGH.

ON Sunday, the 24th ult., this Roman Catholic cathedral,* was consecrated. It is stated that the building has already cost upwards of £60,000, and there remains much in connection with the exterior and interior to be completed yet. During the progress of the works the architectural features of the building have been often described. For the present it will suffice to say that it is erected on the west of a hill in the immediate vicinity of Armagh, to the north-east of the town. From any portion of the pathway around it splendid views of the surrounding district can be had, while for miles around the tall spires which surmount the front towers are distinctly recognisable.

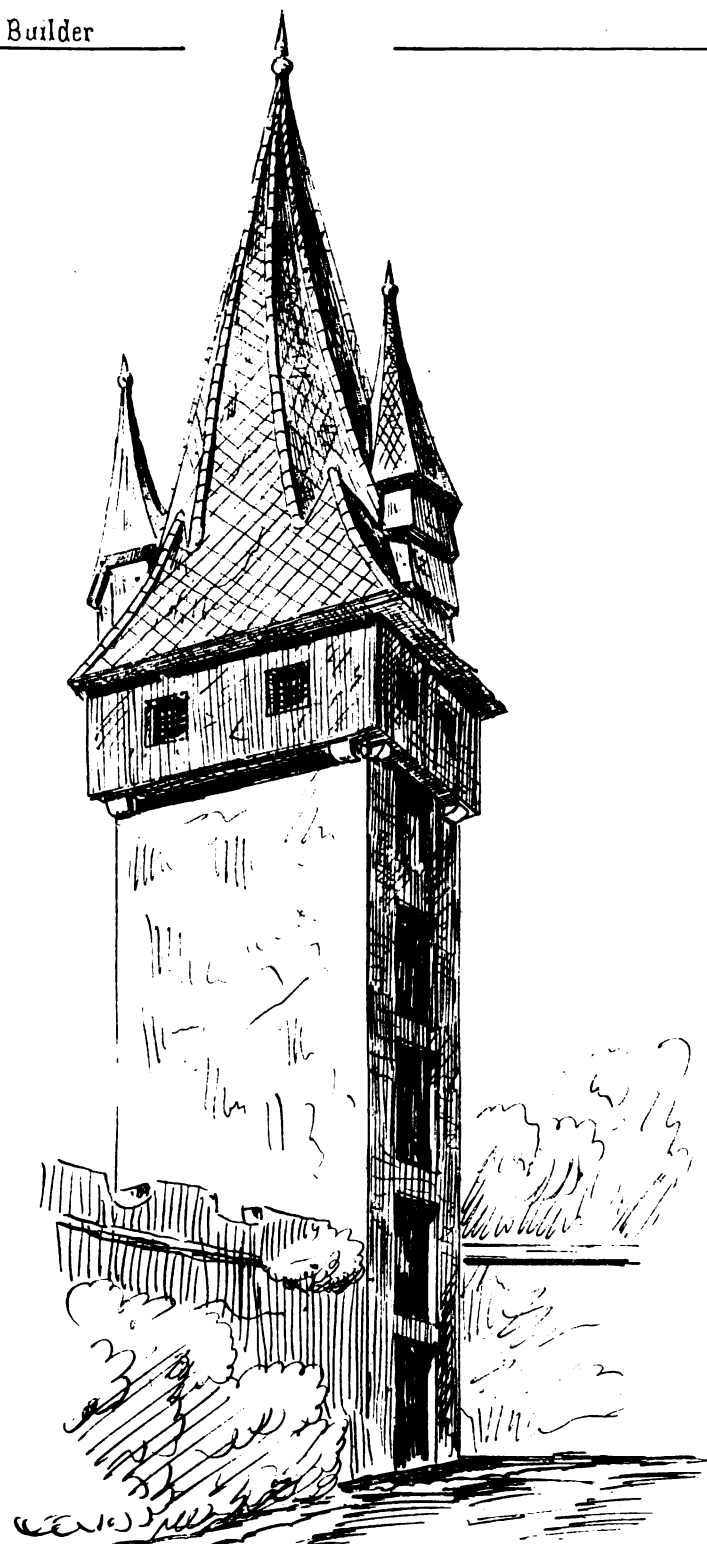
It is built in the form of a cross, the arms extending almost due north and south. In style it is in the main Decorated Gothic, but in the front specially are several noticeable departures from the original design. Those are to some extent accounted for by the revolution which between 1841 and 1854 took place in church architecture, and the fact that successive architects who have had charge of the building thought it well to make changes more or less extensive in the original plans. These changes have naturally produced a rather mixed style in the appearance of the building viewed as a whole, but still the mixture of style does not detract from the beauty of the edifice. The foundation-stone was laid on the 17th of March, 1838—more than thirty-five years ago.

* An exterior view was given in No. for March 1st, 1863.

Internally the building is lofty, well-proportioned, and admirably lighted. The walls are 210 ft. in length, 91 ft. high from floor to ridge of roof, 72 ft. across nave and aisle, and 112 ft. across the transept. The spires in front rise to a height of 210 ft. The nave is separated on each side from the aisles by six bays of clustered shafts, with moulded capitals surmounted by busts of saints, and supporting deeply-moulded arches, while three bays of similar shafts and arches separate the church from its aisles. Extending the whole length over this series of arches are the triforia, consisting of polished marble shafts, with moulded bases and carved capitals, each arch being filled up with elaborate tracery work. About the triforia rises the clerestory, containing in each bay three-light traceried windows. The windows of the aisle are three-light, those of the north and south transept five-light, while the east window is seven-light, and all are filled with moulded mullions and rich tracery. The glass at present in these windows is plain, but it is intended subsequently to have it replaced by stained glass, which, when fitted, will add much to the beauty of the interior. At present there are four altars erected in the building, the high one occupying an elevated position in the eastern portion of the central transept, and the others being placed against the western end—one facing down the chancel and the other two facing the side aisles. All of them are formed of highly-polished Sicilian marble, and the upper three are surmounted by beautifully carved arched tracery, having niches for miniature statuettes, some of which, representing evangelists and angels, are already placed in position. On the high altar stands a large brazen representation of the Crucifixion, with at either side three large massive brass standards for wax tapers.

AN APOLOGY FOR THE COLLAPSED MAIN DRAINAGE SCHEME.

THE engineers of the Dublin Main Drainage Scheme have reported, and, as was to be expected, their report is but a pilot balloon or preliminary to a longer report, which may in its turn be supplemented with another. We can give credit to Messrs. Bazalgette and Neville for their explanation, so far as the increased cost of materials explains the enormously large tenders sent in for constructing the works. There are other matters, however, alluded to in their report which must be taken with a grain of salt. Between what was proposed to be used as materials of construction, and what was actually intended to be used, there happens to be a wide difference. Again, considering the bankrupt state of this city for some years, and the complaints that are always being made by the Corporation as to want of funds, why were several costly additional works added to the original plan? Surely Mr. Park Neville may be credited, with knowing the state of the Corporation finances, and of being able to form an estimate of what could be accomplished by the available resources of the City Estate. If the additional works alluded to in the report of the engineers have, strictly speaking, no relation to the Main Drainage Scheme, why were they attached? As to the provisional quantities included in the tenders, there well may exist two opinions. They "may never be wanted," quoth the engineers, but is it not more likely they may, whether the actual want becomes a want or not? We are not disposed to criticise severely the minikin report of the two able engineers, who have not lost anything by the delay of their works, and who are no doubt able and willing to proceed with them as soon as matters can be conveniently arranged. The citizens generally are the losers by the failure of the scheme; the death-rate is preserved; disease extends because nuisances accumulate everywhere in the city, except in a few favoured places. A foul and abominably stinking river flows through our city, and the dwellers in its vicinity breathe a poison-impregnated

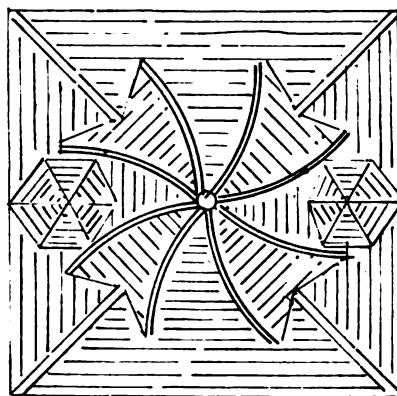


Watch Tower - City Wall.

Dublin



St. Leonhardskirche
Biele

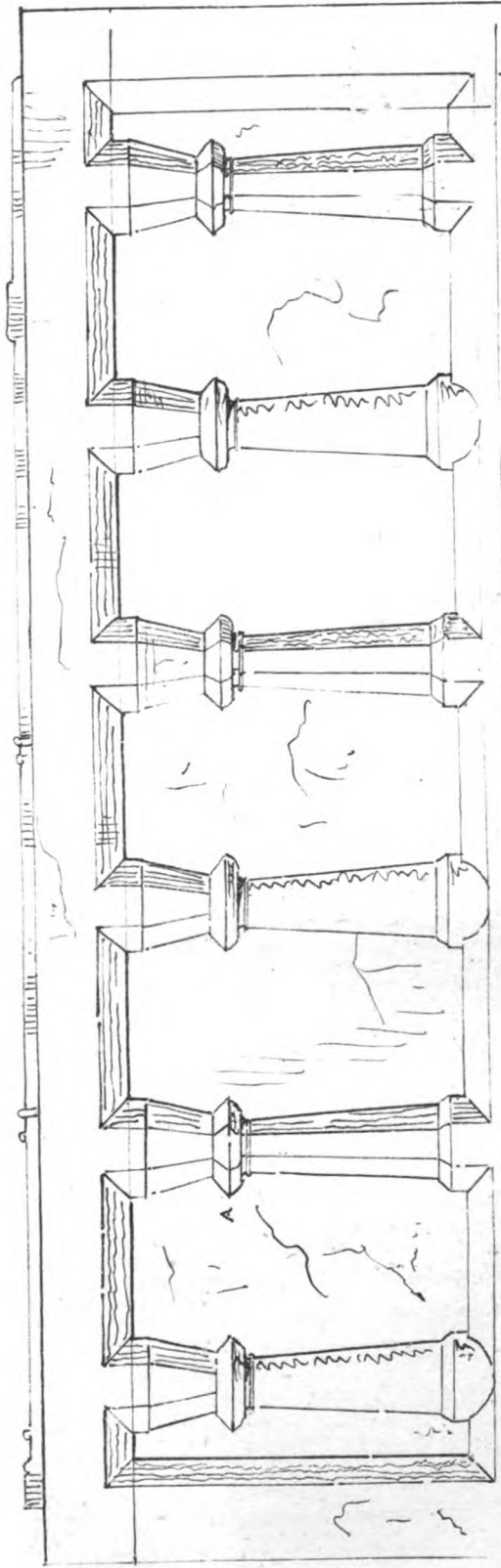
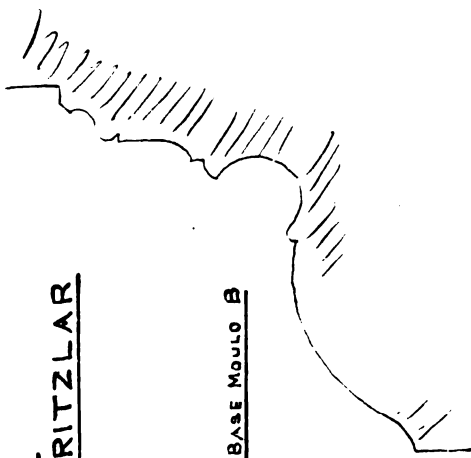


Plan

TOMB - COLLEGE CHURCH - FRITZLAR

MOULDING AT A
hatched

BASE MOULD B



atmosphere. Thousands have been expended in wanton and criminal litigation, and behold the result—a dirt-submerged and plague-ridden city!

Are we to take the annexed letter as an engineering apology, or an apology in *re* Corporate neglect?

To the Main Drainage Committee of the Corporation of Dublin.

As requested by you, we have the honor to submit for your consideration the following facts with reference to the extraordinary high tenders which you have received for the execution of the Main Drainage Works. The present period is one which presents peculiar difficulties in arriving at the actual value of any class of work where skilled and unskilled labour is largely employed; for not only has the pay for such labour been increased, but the hours of labour have also been shortened, and the strikes, which are now of almost daily occurrence, render it difficult to estimate its value. The present exceptional state of things has enormously increased the cost of all kinds of building material. This may be exemplified by a reference to what has taken place within the last two years in the iron and coal trades. The remarkable discrepancy between the amount of our Parliamentary estimate and the amounts of the tenders sent in will be perfectly understood by your committee after even a cursory examination of the circumstances that exist now, and the prices of materials that at present prevail, and those that existed and prevailed at the time your bill was passing through parliament. Since our estimates were made in 1870-71, all classes of labour and material have risen in a most unprecedented manner. Iron pipes which were contracted for by the Dublin Corporation for the Vartry Water Works in 1862 were obtained for £5 5s. per ton. In 1871—the time that our parliamentary estimate was made—we received a tender to deliver in Dublin the 5-foot iron pipes proposed to be used in the Main Drainage Works, at from £6 10s. to £7 per ton, and have a tender in our hands to this effect from the firm who supplied the Vartry pipes. At the present time such pipes delivered in Dublin would cost about £13 10s. per ton—an increase of price of fully 100 per cent. Again, Portland cement, which we proposed to use largely in the formation of concrete sewers, was, at the period of our estimate, procurable at 40s. per ton, and it has now risen to 75s. per ton. The price of bricks have increased in nearly the same proportion, and stone, timber, and all other materials have also greatly increased in price, though not quite to so large an extent as the materials above mentioned. The effect of the present exceptional state of things, including the increased cost of all materials, and the great rise in the labour market, has for the moment paralysed the progress of public works of all descriptions, and in many cases put a total stop to contemplated works of a nature that could be deferred without serious disadvantage. We confidently trust that your committee will concur with us in the opinion, that the altered state of the labour market and the enormous increase in the price of all classes of materials intended to be used in the construction of your works, have been the main cause of the excessively high tenders furnished to you. We have already given long and anxious thought to the consideration of the whole case, with a view to the placing before you such propositions for the substitution in some cases for materials which have risen excessively in price, others which will be equal in effectiveness and stability, but which have not so risen, and otherwise so adjusting our constructive arrangements that you may be able to obtain tenders for your works at a cost little, if at all, in excess of the powers conferred by parliament on the corporation. The paramount necessity of securing efficiency and stability for a work of such magnitude and importance, renders it essential that all our plans and arrangements should be fully matured before making a definite suggestion to you, and for that purpose we ask leave to report again, which we will be able to do shortly, when we confidently expect to recommend a course which will enable you to perfect the great project you have undertaken at a cost which will amply justify the labour you have bestowed upon it, and meet the unanimous approval of yourselves and of the ratepayers of the metropolis. We should here state generally that several costly additional works have been added to the original plan which have no relation, strictly speaking, to the Main Drainage of the metropolis; we may particularize the widening of the quays at Essex Bridge, additional works to siphons at Carlisle Bridge, in anticipation of the rebuilding of that structure, provisional quantities included in the tenders, and which may never be wanted, and others, all of which have added from £70,000 to £100,000 to the

contemplated cost of the work. All these we intend to examine into in detail, and report fully to your committee, so as to show the cost of all such items separate from those that are essentially parts of the drainage works proper.

J. W. BAZALGETTE.
PARK NEVILLE.

THE ASPHALTING OF THE STREETS.

At the special meeting of the Corporation, the offer of the Val de Travers Company was considered and decided upon. It was proposed by Mr. Byrne, and seconded by Mr. Meagher, that "No. 1 Committee be authorized to have such of the roadways and footways of the borough as they might think necessary asphalted in accordance with the specifications of the City Engineer, and the proposal just read. The amount not to exceed £20,000, without further authority from the Council, and that the tender of Mr. Pottrell, the manager of the Asphalts Company, in accordance with the terms of the documents named, should be accepted; and that the law agent should be directed to prepare the necessary mortgages, and the Town Clerk authorized to affix the city seal to the mortgages, when prepared for the amount of £17,500." We have spoken long since of the value of asphalt for our leading streets, and of its durability when properly manipulated and laid.

SANITARY NOTES.

At a meeting of the Sanitary Association the inspection sub-committee brought up their usual weekly report, which was read, and a copy ordered to be forwarded to the Public Health Committee. The following is an extract from the report:—"Drury-lane, Joseph-lane, Fade-street. The whole of this district requires attention and careful inspection. The lanes, yards, and entries are, for the most part, continually encumbered with refuse of all kinds. 18 Ardee-street—the roof of this house is in a ruinous state, and partly admits rain water, traces of which are visible on the walls even on the ground floor. The boarding in nearly all the rooms is worm-eaten and decayed. At the north end of the house there is a filthy ashpit; and No. 17 has a badly-drained and filthy yard. Although No. 18 has been recently whitewashed, your sub-committee must again record their conviction that this and the neighbouring house are perfectly unfit for human habitation, regard being had to the history of these houses as fever-nests and the habitats from time to time of many zymotic diseases. Graves' Cottages, off Newfoundland-street, at No. 10 a filthy back yard; pigs live under the window. In front of No. 15, 16, and 17, are collections of dirty stagnant water, which has no means of escape. Just under the window of No. 17 is a vile ashpit, &c. Fausagh-lane—32 densely inhabited cottages, with earthen floors; no windows in the back, and, therefore, no proper ventilation; no back yards. There are three abominable ashpits near the houses. Small-pox ravaged this lane in 1872."

At the Southern Divisional Court Mr. Ennis applied, on behalf of the sanitary authorities, that some penalty be inflicted on Mr. Christopher Mooney, who owns property in Meath-street, for disobedience of a magistrate's order made on the 16th May last, requiring him to introduce water to his houses adjoining Cole's-alley, within a reasonable time. Constables were examined to prove that nothing had been done since the order in question was made; and Mr. Boyle, C.E., deposed that it was absolutely necessary, to insure the proper sanitary condition of the neighbourhood, that water should be brought into the premises in question, they being large houses set in tenements, and consequently inhabited by many families. Mr. P. White, who was for the defendant, stated that an application had been made to the Corporation to erect a fountain in Meath-street, and had only recently received an answer that this could not be done. If Mr. Mooney was to be at the expense of doing this work himself he (Mr. White) submitted that no extra charge in the shape of fine should be imposed. His Worship remarked that though his order to introduce water was made on the 16th May last, the application to the Corporation was not made till the 6th of August, and now, on the 19th August, nothing further had been done. He felt coerced to impose a fine of £1 and costs.

Patrick Finnegan, Great Britain-street, was summoned by the sanitary constable for neglecting to comply with a magistrate's order for the abatement of a nuisance in the houses 1, 2, and 3,

George's-lane, defendant's property. His worship inflicted a fine of 20s. There were seventeen sanitary cases before the court, and orders for abatement within seven and fourteen days were made.

In another case the magistrate imposed a fine of 20s. on Mr. Kavanagh, of Stephen-street, for disobeying a magistrate's order in reference to a nuisance existing at his premises in Great Ship-street. Mr. Reddy, Sandymount, was fined 5s. for a similar offence in Bride-street. His worship made orders for the removal of nuisances in seventeen cases.

THE NEW GAS.

ON Tuesday week a number of gentlemen visited Chichester for the purpose of examining the works of the new Gaslight Company, and forming an opinion as to the quality of the light supplied to that town by the new process. The manager (Mr. Spice) before taking the company through the works, observed that this company purchased the patent of Mr. Ruck, and adopted it to the full extent. The process consisted in passing water through a retort, causing it to flash into steam, and then to superheat it. The water was returned into the retort in the presence of coke. If they were in Ireland they would use peat, but coke in this country was the most convenient and less costly material. It was then passed on to a purifier, which contained a collection of iron scraps, iron chains, short and broken pieces, and then through a washer, and then through a purifier containing oxide of iron, by which means the sulphur was taken out. Thence it was passed into a reservoir containing petroleum spirit, the gravity of which was less than 0.680. It was then passed to the gasholder. From a ton of coke in the retort they got 132,000 cubic feet of gas. They used about twice that quantity of coke in the furnace. Thus it took three tons to produce 132,000 cubic feet of gas. But they found that gas expanded by passing through the spirit to the extent of 25 per cent., so that they actually got 165,000 cubic feet of lighting gas from the materials he had named. The gas consisted of a compound containing hydrogen, carbonic acid, and carbonic oxide, and the quantity of spirit required was 1½ gallon. Labour, wear, and tear, and materials might be put down at 7½d. per 1,000, spirit 1s., and coke 5d., the whole being 2s. 0½d. per 1,000. These figures applied to the 132,000 cubic feet of gas, from which, if they deducted the cost of the process he had named, they would arrive at the cost of the 165,000 cubic feet. With regard to gas companies, he held that it was desirable in the present state of affairs in the coal trade that gas managers should endeavour to seek some relief from other quarters, and so far as he was concerned this had been one of the motives by which he had been guided. He had felt that if water gas could have been made at less cost, and of equal quality, as far as light-giving properties, as coal gas, a benefit must needs be conferred upon gas companies whether at home or abroad. When we first proceeded to inquire into the subject he had little idea that it could be of much value to gas companies in England, but he thought that if a permanent gas was procurable in this way it would be a great advantage to those engaged in foreign undertakings where coal was not easily procurable. But when he found that he could make 18-candle gas from water, with the aid of coke and petroleum spirit, at a cost of 1s. 8d. per 1,000 cubic feet, it dawned upon him that while gas coals cost nearly 30s. per ton, and gas, therefore, of the same quality must cost 2s. 6d. per 1,000, he might here find his way to the practical working of something that would be of value to gas companies at home. Mr. Spice then observed that the material for the manufacture was practically inexhaustible. Where coke was not obtainable, they could have recourse to peat, and where peat was not to be had they could have recourse to lignite; and as for petroleum he quoted the sales for one week of the article from the wells of Pennsylvania, which amounted to 15,000 barrels at the price of 2d. per gallon. The gas of the city, which is supplied by the new company, burned with steadiness and clearness, but it did not seem to give more illuminative power than the gas from coal.

THE PATENT GLASS CUTTER.—Of the many inventions of modern days, one of the most useful and surprising is a substitute for the glaziers' diamond, which can be used effectually by the most inexperienced. In shape it resembles the ordinary glaziers' diamond, but instead of diamond, a small circular piece of hardened steel, which revolves like a wheel when passing over the glass, is substituted, and we can testify that it accomplishes its work with astonishing rapidity, and cuts thick or thin glass with equal ease. This little novelty, introduced to Ireland by the eminent firm of Messrs. Dockrell, Sons, and Co., of George's-street, Dublin, will be found invaluable to the amateur artisan and horticulturist, and is placed within the reach of all by its moderate price—only 6s. 6d. each, post free.

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

[Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

We purpose in these supplementary notes to "Memorials of Essex Bridge," to reproduce a few more extracts from the work of George Semple, and append thereto whatever remarks the subject may suggest. His treatise on "Building in Water" opens by giving some particulars of the methods made use of by the ancients in building, and on the nature and qualities of lime, mortar, and grout. Although our architect was not possessed of any deep scientific or chemical knowledge of the elements of building materials, yet his practical knowledge and experience of their use, and his observations thereon, are worthy of consideration. At the time that George Semple commenced his practice in Dublin, architecture was in rather a low state, and the modern public buildings of Dublin in which our citizens take a just pride, had not yet been erected.

In *re* building in water, he begins:—

THE ARCHITECT'S REASONS FOR WRITING.

"My thoughts on this subject took their rise from an observation I had made on our taking up the foundations of Essex Bridge, where we found that the bed of sharp gravel on which the piers had been built was actually petrified seemingly into a close solid stone, by the small quantities of the petrifying qualities of the lime that had sunk down into it in about seventy years, but principally since the erecting of the Effigy in 1722 [the statue of George I.], together with what I observed concerning the exceeding great strength of the mortar in the foundation of the pier which I repaired in Ormond Bridge. Having taken proper notes and observations thereon, and compared them with what Palladio has mentioned in his 1st Book, ch. 9, sect. 6, concerning some 'walls called Reimpienta, or coffer-work which were made by the ancients by taking planks laid edgewise according to the thickness of the wall, filling the void or space between them with cement and all sorts of small stone mingled together, and continued after this manner from course to course. There are walls now at Sirmion, upon the Lake di Garda, built after this manner.' I say these principal matters, and what I have learned from several other Roman authors and ancient historians, have at length produced what I am now about to lay before you, not in the least doubting, but you will take them into contemplation, and improve the hints I shall give you, so far as you shall find them worthy of your notice; and likewise to be productive of public or private utility. These being my motives for writing and publishing these sheets, which I confess has brought on me a very arduous task, because I am conscious of my great incapacity to perform such an undertaking, but yet, I presume, that if through the course of my little practice, any useful occurrences have happened in my way, it is better to leave them in the possession of the public, even irregularly clothed in their poor homely spun apparel, than to carry them with me to my grave.

"And now as you know the motives that have actuated my endeavours, and the end I propose in this part of my work, and as I have such great objects in view, I hope I shall be honoured with a serious and candid perusal, that the scope and designs of this work may be regarded, the real importance of my remarks and contrivances considered, and not my language or expression to be anatomised, as if those only were to employ the attention of my readers, for I study neither style nor diction, any further than what I think necessary to communicate, and render my sentiments intelligible to my readers; most zealously endeavouring to reduce all my adequate ideas into forms and figures exhibited on the ensuing plates which henceforward must principally govern and direct the thread of my subject."

[It would be well, indeed, if architects and

others were actuated by similar motives as those which influenced George Semple, to record their experiences for the benefit of their brethren. The quotation from Palladio reminds us forcibly of the modern system of building with concrete, but more on that anon. We shall subjoin the extract from ancient authors as given by Semple, and his remarks thereon.]

ANCIENT COFFER OR CASED WALLS.

"What Palladio calls coffers, the translators of Alberti call cases, which in fact are the same things. In Alberti's 3rd book, chapter 5, he recites various methods made use of by the ancients, both in laying foundations and in building walls in cases, and among the rest he expresses himself in these words:—

"I have observed, that in other places the ancients, who were wonderfully expert in making great works, followed different methods in filling up foundations. In the Sepulchre of the Antonini, they filled them up with little pieces of very hard stone, each no bigger than a handful, and which they perfectly drowned in mortar; in the Forum Argentarium, with fragments of all sorts of broken stones; in the Comitia with bits of the very worst sorts of soft stones. I have known other instances where the ancients have much the same sort of foundations, and structures, too, of coarse gravel and common stones that they have picked up by chance, and which have lasted many ages."

"Upon pulling down a very high tower at Bologna they discovered that the foundations were filled with nothing but round stones and chalk to the height of 9 ft., the other parts were built with mortar. We find, therefore, that very different methods have been used, and which to approve of most I confess myself at a loss, all of them having endured so long firm and sound, so I think we ought to choose that which is the least expensive, provided we do not throw in all manner of old rubbish or anything apt to moulder."

"After his mentioning many other things concerning walls, he concludes this chapter with these words:—'I therefore lay it down as an indispensable rule, that all the first course of work from the level of the foundation should be composed of the hardest, soundest, and largest stones.' But after this he treats largely of carrying up the outsides with cut stones and filling (or stuffing, as he calls it) the inside with small stones and lime liquid. And he concludes his eighth chapter with this observation:—'Lastly, we are taught what I find constantly observed among the ancients, never to admit any stone among the stuffing that weighs above one pound, because they supposed that small stones united more easily, and knit better with the cement than large ones.'

"In his tenth chapter are these words:—'There are some who, observing here and there in the works of the ancients, large stones which, where they join, seemed daubed over with red earth. I imagine that the ancients used this instead of mortar.' Chapter eleventh he says:—'But as we shall sometimes be obliged to make use of other sorts of stones, whereof some are not cemented with mortar,' or grout, I suppose, 'but only with slime,' some tell us 'that slime which is used for cement ought to be like pitch, and that the best is that which being steeped in water is slowest in dissolving, and will not easily rub off. Others commend the sandy as best, because it is the most tractable. In ancient structures we often meet with very strong walls made of nothing but rubbish and broken stuff; these are built like the mud walls in Spain and Africa by fastening on each side planks or hurdles to keep them together till dry and settled; but herein they differ, for some say that the ancients filled up their work with mortar liquid, and in a manner floating.'

"Numerous other authors have transmitted these or other like methods, but these are sufficient for our present purpose; let us therefore in the next place consider the

nature and peculiar qualities of some of the materials which we are apt to make use of, for there are many things necessary to be considered and strictly observed before we enter into a full discussion of our subject."

[After giving his readers the above introduction to the work of Alberti, our architect proceeds to make some odd and interesting remarks on lime, mortar, and grout, with his own experiences and that of his father and others engaged in building operations. The following observations on the subject treated are historically interesting as a piece of building history, and even otherwise.]

SEMPLE ON LIME, MORTAR, AND GROUT.

"I have from my childhood been well acquainted with the nature of lime and sand made in mortar of all sorts that have been used in buildings in these countries, and tried numerous experiments with them, on which, together with what I have observed and learned from old experienced workmen during the course of sixty years, I think I can safely affirm that good mortar made of pure and well-burnt limestone, and properly made up with sharp clean sand, free from any sort of earth, loam, or mud, will within some considerable time actually petrify, and as it were turn to the consistence of stone. I remember I had of my remarks from an old Scotch mason, which I shall give you in his own identical words, that is:—

'When a hundred years are past and gone,
Then gude mortar is grown to a stane (stone).'

"My father (who was a workman about the year 1675) often told me, and my own repeated observations convince me, that the method masons practised in former times, in building churches, abbeys, castles, and other sumptuous edifices in this country was to this effect: After they laid the outside courses with large stones laid on the flat in swimming beds of mortar, they hearted their walls with their spawls and smallest stones; and as they laid them in, they poured plenty of boiling grout, or hot lime liquid, among them, so as to incorporate them together as it were with melted lead, whereby the heat of it exhausted the moisture of the outside mortar, and united most firmly both it and the stones, and filled every pore, which (as the masons termed it) set—that is, grew hard immediately; and this method was taught to our ancient masons by the Romish clergy that came to plant christianity in these countries, and I affirm that in many of such old buildings I have seen the mortar as it were run together and harder to break than the stones were.

"But with respect to the matter in hand, I admit that mortar will not set or grow so soon hard in water as upon land; but I am fully convinced that good mortar will in reasonable time grow as firm and as substantial in water as upon dry land. But not dwelling upon mere reports I shall come to facts, and I do also affirm that in pulling down Essex Bridge, and repairing Ormond Bridge, we found the mortar of the lower courses of the piers better cemented to the stones than it was in the upper work, for a wet stone or a wet brick imbibes the mortar and holds it faster than a dry stone or brick will do; the dust and dryness of either crumbles the mortar immediately, and the wet stones or bricks suck and unite with it. As for instance take two bricks equally well burned; wet one of them, and lay it on a bed of mortar, and at some distance from that lay on the other dry; let them lie so as long as you please, and take them up and you will find the wet brick will bring up its bed of mortar with it, but the dry brick will separate and leave its bed of mortar behind it."

[Despite that this knowledge is well known to architects and builders at the present day, it is difficult to get either builders or workmen to build with wet or moistened bricks; even where distinctly ordered to use wet bricks or to wet them according as they are being used, the workman will, if not watched, evade the order, and use dry bricks if he can get them to hand. It is stated that the

using of wet bricks is very trying to the hands of workmen, and necessitates the wearing of pieces of leather to protect the inside of their fingers and their palms from being excoriated. There can be no doubt about wet bricks making a better bond with the mortar where it is good, and even with inferior mortar the walls would be the stronger by wetting the bricks before using.]

"There are several sorts of limestones: some, indeed, set much sooner and harder under water than others, but any good lime properly mixed, and tempered with sharp clean sand, will bind and cement as effectually under water as above it, as I hinted before. What I mean by good lime, is that which is made of clean close-grained limestone. All marble is limestone, but all limestone is not marble. All marble will take a polish, but all stones that will burn to lime, will not take a polish. For instance, chalk will make lime, but it will neither polish nor make good lime for any purpose; therefore I advise you to choose the closest-grained, the hardest, and consequently the heaviest limestone for any work, but particularly for water-work. I need not explain what by sharp clean sand, but I shall give this caution, that it is better to put too much sand in your mortar than too little. I know workmen choose to have their mortar rich, because it works the pleasanter; but rich mortar will not stand the weather so well, nor grow so hard as poor mortar will do; if it were all lime it would have no more strength in comparison than clay."

[We will continue some further extracts from Semple's work in our next, on the above materials. It will be interesting to see how far the practice of a century or a century and a-half ago, differs from the present in the selection of lime and sand, and its manipulation. We will also have occasion to quote the opinions and experiences of another old native architect in sand and mortar—an architect who seems to have had much practice in his day, but about whose time and works very little particulars are accessible. The architect alluded to is spoken of in Ratty's "Natural History of Dublin," thus: "Thomas Covey a most ingenious and experienced architect, having been employed in building many of the noted forts and barracks in this kingdom." Covey seems to have been a contemporary of Semple's; and it occurs to us, that his practice extended farther back in the eighteenth century than the latter. With all the modern chemical knowledge of building materials that exist, yet the greater portion of the building mortar used at present is complete rubbish, and disgraceful in the extreme to architect and builder. The mortar of the old builders tells its own tale to day, and proves that those who made it valued their name and reputation.]

To be continued.

HOLYHEAD BREAKWATER AND NEW HARBOUR.

THE Holyhead Breakwater and harbour of refuge, which was opened formally by the Prince of Wales since our last issue, has been many years in course of construction. Recently Mr. Hawkshaw, the superintending engineer of the Board of Trade, made a report which, as was to be expected, details very accurately the progress and completion of the work. It is about forty years since the attention of the Government was directed to the importance of providing improved harbour accommodation on the coast of North Wales in the interest of the packet service between England and Ireland, and in the investigation of the subject it was felt to be desirable to combine with any such project a harbour of refuge. As soon as the bridging of the Menai Straits by the Chester and Holyhead Railway Company became a settled fact, Holyhead was acknowledged to be the most suitable place for the harbour, and was selected accordingly. The plan of the late Mr. Rendel was ultimately accepted by the Government and an act of Parliament

for the purchase of the land was passed in 1847. But bold as was the original conception of a harbour comprising a north breakwater of 5,360 ft. in length from the coast-line and an east breakwater about 2,000 ft. in length, the two enclosing between them an area of 267 acres of available water space with a packet pier 1,500 ft. long, it was found, as the works proceeded, that the harbour would prove too small even for refuge purposes, and it was, therefore, determined to extend the northern breakwater to 7,860 ft. from the shore, thus sheltering a roadstead of 400 acres of deep water in addition to the 267 acres of water-space. The breakwater is terminated by a head, on which is erected a lighthouse. Mr. Hawkshaw gives an interesting account of the execution of the work. The solid central wall of massive masonry is erected on a great rubble mound of stone. The stone used is quartz rock, obtained from an adjoining hill known as Holyhead Mountain. The quarrying operations were among the largest which had been undertaken anywhere. Mining on a large scale was resorted to; in some of the largest explosions as much as ten tons of gunpowder were used. The rubble mound is of great size, the average depth of water at low-water spring tides being 40 ft., and the greatest depth 55 ft. At the lever of low water the mound is nowhere less in width than 250 ft., and in 50 ft. depth of water it is 400 ft. wide at the base. It contains altogether about 7,000,000 tons of stone. The rubble mound having been formed and consolidated by the continual action of the sea, the superstructure was erected. This consists of a large construction of solid central wall of massive masonry built principally of stone from the Holyhead Mountain quarries. Many of the stones are of very large size, some weighing upwards of 15 tons, and the work is set in lias lime mortar. The foundations of this wall are laid at the level of low water, for which purpose the loose stone of the mound had to be excavated. The wall was built, as near as circumstances would admit, to the inner edge of the stone deposit in order to allow as long a foreshore on the seaside as could be obtained. This solid wall is carried up to a height of 38 ft. 9 in. above lower water, upon which is a handsome promenade surmounted on the seaside by a massive parapet. At a lower level, or at 27 ft. above low water, there is on the harbour side of the central wall a lower terrace or quay 40 ft. wide formed by an inner wall built at a distance from the central wall, the intermediate space being filled in with suitable material. The main object of the superstructure is to shelter the interior harbour more effectually, and to prevent the loose stone deposit from washing into the harbour. It is so designed that, if desirable at some future time, by throwing out jetties, convenient wharfage-room can be obtained at a small cost. The head at the end of the breakwater is a massive structure 150 ft. long, and 50 ft. wide. It is founded on the rubble mound, at a level varying from 20 ft. to 28 ft. below low water, and it is built of ashlar masonry, the stone for the most part being Anglesea limestone. The masonry below low water was built by means of divers with helmets. The first contract for these extensive public works was made on the 24th December, 1847. The light in the lighthouse at the end of the breakwater is a red revolving dioptric light of the third order, and will be under the charge of the Corporation of Trinity House. The cost of the whole of the works, including the provision of accommodation for the Irish postal service in the old harbour and miscellaneous works to this time has approached £1,500,000. The harbour has become an important national undertaking, and it is used to a very large extent. About 3,500 ships seek refuge in it in the course of a year. Few harbours possess greater facilities of ingress and egress, and the holding ground is very good. The harbour is entirely free to all vessels resorting to it for purposes of shelter. The late Mr. J. M. Rendel was engineer in chief from the commencement

until his death in 1856; he was succeeded by Mr. J. Hawkshaw. Mr. G. C. Dobson has been resident engineer throughout, and Messrs. J. and C. Rigby the contractors.

A tablet commemorates the opening of the harbour last month and is as follows:—"This breakwater was commenced in 1845, and in August, 1873, Albert Edward Prince of Wales declared the work complete. Superintending engineers, James Meadows Rendel, 1845-1856, John Hawkshaw, 1857-1878. G. Dobson, resident engineer. J. and C. Rigby, contractors."

ON HEALTH AND COMFORT IN HOUSE BUILDING.*

As implied in the title, my subject is not house-building itself, as such, but only certain arrangements for health and comfort therein.

House-building has at least two aspects—architectural and sanitary. The former belongs exclusively to your own profession, but the latter comes within the sphere of the medical profession also. It is the architect's province to provide dwellings for the people, and to see that they are made protective and safe; and it is part of the medical man's province to help to make them healthy and comfortable. In this respect the medical profession has lately been very forcibly reminded of its duty by one of your own Fellows (Mr. George Aitchison), who, in the *Builder* of December 2, 1872, made the following observations:—"No greater benefit could be conferred on mankind than the teaching them the necessity of ventilation, but that lesson is more likely to be learnt if it come from the doctor than from the architect. . . . Until the faculty can convince the people that their life is shortened and serious diseases are brought on by want of ventilation, architects have no chance."

House-building being the point in which the duties of the architect and the physician meet, it becomes necessary that architects and medical men should occasionally discuss together the requirements involved in this art. Much public and much mutual benefit would, I am sure, result from such a practice. Under this impression I willingly accepted your invitation, and I am pleased that I have been able to be present myself, because I look forward to much interesting and profitable discussion this evening. The object I have in view is to invite your consideration of a few conditions of house-building that I deem of particular importance in a sanitary and medical point of view.

In building a dwelling-house, the conditions I deem of essential importance are the following:—

1. That the house shall be so placed as to be as much as possible exposed to the fresh air and sunlight; because fresh air and sunlight are essential to the health and growth and life of the occupants. The site, therefore, should be rather elevated, if not absolutely, at all events in comparison with the surrounding objects.

2. That it shall be absolutely free from damp; because a damp house is a most potent and active and ever-present cause of disease, especially of rheumatism, neuralgia, colds, coughs, consumption, and such like. The site, therefore, if not naturally dry, must be rendered so by means of asphalt or cement, throughout the foundation, and the roof and gutters and drainage must be perfect. All the house-drains should terminate outside the house on an open grid or trap; that is, they should be cut off from the street drain, and they should be ventilated by having a pipe run up from every soil-pipe and every bend in the house.

3. That it shall be so placed that the direct rays of the sun shall have free admission into the living apartments; because the sun's rays impart a healthy and invigorating quality to the air, and stimulate the vitality of human beings as they do those of plants, and without sunlight human beings, as well as plants,

* From a paper by Mr. John W. Hayward, Liverpool. Read at the Royal Institute of British Architects.

would sicken and die. The aspect, therefore, should be south-east.

4. That the look-out from the living apartments shall be cheerful, lively, and interesting; because much of the time of the family must be spent in-doors, and a cheerful look-out is as necessary to render indoors attractive and even endurable in the daytime as society is in the evening. The prospect, therefore, should be as extensive and varied as possible.

5. The apartments should admit into themselves a great quantity of light; because light is essential to the health and vigour of the inmates. The window openings should, therefore, be large; but as the greater the surface of glass, the colder the rooms in winter, and the hotter in summer.

6. The window openings should be well splayed, as well outside as inside, so as to do with as little glass as possible.

7. The windows should be so arranged as to admit the direct rays of the sun at the times when the apartments are in use; because it is when the apartments are occupied that they require the cheering and invigorating influence of the sun's rays. For instance, the breakfast-room window should admit the early morning rays; the dining-room windows, one should admit the morning rays for breakfast time, and the other the noon rays for dinner time; and the drawing-room windows, one should admit the morning rays for callers, and another the evening rays for company; and the bed-room windows should, if possible, admit the early morning rays.

8. The interior of the apartments should provide wall space for the arrangement of furniture; because without wall space no manner of furnishing a room can make it either handsome, elegant, or comfortable. The windows, therefore, should be few, and they and the door and fireplace should be so arranged as to provide as much wall space as possible.

9. In the bed-rooms the window, door, and fireplace should be so arranged that the bed can be fixed entirely out of the draught, and not have to be placed between the window and door, the window and fireplace, or the door and fireplace; because a cold draught playing on persons whilst sleeping is often dangerous to life, and always destructive of comfort.

10. The doors of the apartments, besides, not admitting cold air when shut, ought not to admit cold air when open, because the draught thus produced not only destroys the comfort of the apartment, but produces lumbago, rheumatism, neuralgia, &c., in the occupants. The doors should, therefore, open out of a warmed lobby or corridor.

11. The apartments should provide a large cubic space for air, because plenty of air is essential to the health and comfort of the inmates. The apartments should, therefore, be as large and lofty as possible.

12. The apartments, besides providing a large cubic space for air, should also provide for the escape of the foul and admission of fresh air, because however large an apartment is, the air is sure to become deteriorated and contaminated when the apartment is occupied by living beings. There should, therefore, be two special openings to each apartment, one for the escape of the foul air, and another for the admission of fresh air. There must be two openings, an outlet and an inlet. It is useless to make one without the other; it is useless to make an outlet unless there is also an inlet, for no air can go out if none comes in. This is a self-evident fact, still it is very frequently disregarded in attempting to ventilate apartments. There will, for instance, be a perforated or louvred pane in the window, a perforated brick or grating in the wall, an Arnott's ventilator in the chimney breast, an opening above the gas, with a tube leading to a grating in the wall or into the chimney smoke-flue, or some other contrivance for the escape of the foul air, whilst there is no opening at all for the admission of fresh air; and the doors and windows are made to fit as tightly as possible, and even list put round

them to prevent any possibility of air getting in by them, as though that could go out which never got in! In these cases, if the outlet act at all as an outlet, it must obtain its supply down the chimney, hence a smoking chimney; but generally, instead of acting as an outlet, it becomes an inlet to supply the current up the chimney, and always so when the fire is burning, hence the cold draught so generally complained of from the ordinary ventilators, and hence the reason that ordinary ventilators are so generally closed up in disappointment and disgust, and ventilation decried as a nuisance, failure, and farce.

13. These openings providing for the escape of foul air and the admission of fresh air should, both of them, be special and permanent, and altogether independent of every other arrangement of the house, such as opening the windows, doors, chimneys, &c., because the escape of foul air and the admission of fresh air are most needed when, in consequence of the coldness of the external air, we close the doors and shut the windows. Special ventilation is most needed in winter, in cold frosty weather, with an east wind blowing, and when we are very careful to shut the doors and windows, and adopt every other means we can to exclude the out-of-doors air, particularly if sitting at table for meals, or round the fire for evening entertainment.

14. The outlet should take the foul air from the upper part of the room, because the foul air being more heated is specifically lighter than the fresh air, and so rises to the upper part of the room. The outlet should, therefore, be in or near the ceiling.

15. The outlet should be effectually protected against any possibility of back draught, indeed, it should have a considerable amount of suction, because any liability to back draught is quite incompatible with an efficient outlet. The outlet, therefore, should not communicate directly with the out-of-doors air, but, by means of a tube or flue, should pass through some permanently heated contrivance. If the outlet go directly to the out-of-doors air, as, for instance, a tube from over the gas to a grating in the outer wall, there will certainly be back draught; and so also will there be if the tube lead to an opening into the chimney flue; at any rate when the fire is not burning, and particularly if the room door be also open, and most certainly if there be also a strong draught up the chimney of another room opening out of the same lobby, as, for instance, a dining room or a kitchen. To prevent any possibility of back draught, the outlet should be provided with some means of constant suction, and the more thoroughly to remove the foul air the more suction the better, provided there is also an ample inlet for fresh air: if not ample, the suction would produce a smoking chimney and draughts from around the windows and doors, and perhaps draw in air from foundation and drains. The necessity for this suction is generally acknowledged, and it is sometimes attempted to be gained by carrying the tube before mentioned up a little way in the smoke-flue, and even by bending it down and round the fireplace. But a fatal objection to this plan is, that it is quite inoperative for the greater part of the year, and is of no use whatever unless the fire is burning; when the fire is not burning it may, indeed, become an inlet, and then an additional objection is, that a back draught down the smoke-flue carries the soot into the room to the spoiling of the ceiling, paper, and furniture. And to be really effectual the suction referred to must be constant and permanent, and operative both winter and summer, and day and night; and whether the apartment is occupied or not, and whether the fire is burning or not. The outlet must, therefore, pass through some contrivance for keeping it constantly and permanently heated.

16. The inlet should admit only warmed air; because the admission of cold air would produce dangerous draughts, and these specially directed towards the part of the room occupied by the inmates in cold weather, viz.,

the neighbourhood of the fireplace. The inlet should, therefore, open out of a warm lobby or corridor.

17. The outlet should be sufficiently large to carry off all the foul air at the time when the apartment is being put to its maximum of use; because it is just at that time the outlet is most needed, its capacity for other times could be regulated by a valve. The outlet for a dining-room, for instance, should be calculated for a dinner or supper party, and that of a drawing-room for a ball, conversazione, or soiree, and should be sufficiently capacious to carry off, at the very least, 15 cubic feet per minute for each occupant. The outlet should, however, be considerably less than the inlet or it will produce draughts.

18. The inlet, on the contrary, should be as capacious as possible; because it has to provide not only for the outlet in the ceiling but also for the chimney, and that when the fire is burning and requiring for its supply alone from 600 to 1,000 cubic feet per minute. Indeed, the inlet should be able to admit more air than can possibly find its way out by both these outlets, otherwise it will produce drafts. When the air can get out of an apartment more rapidly than it can come in there are sure to be currents; but when more air can come in than can get out—when the air has to go out under pressure, so to speak—there will be little or no current. And the inlet should be through the wall of the opposite side of the room to the fireplace, because the fire will then draw the air into and across the room, and thus cause it to circulate throughout the whole of the apartment. If the fireplace be on the same side as the inlet, it will not only not assist to circulate the air throughout the apartment, but it will prevent it from so circulating by drawing it directly up the smoke-flue; and it should, moreover, be split up into as many divisions as possible so as to distribute the supply along the whole side of the room, and thus assist to prevent any perceptible current; and this will be further helped by having the openings through the cornice instead of through the skirting, because then the fresh air will be the warmest that is in the corridor, and it will also have to descend through the warmer air of the room before it can come in contact with the persons therein. When through the skirting it is the coldest air of the corridor; it comes through the coldest air of the room, and it comes first to the part of the body where it can least be borne, viz., the feet.

In this country it is necessary to provide specially for ventilation. In consequence of the nature of our climate, the doors or window can very seldom be left open, even in the day, and never in the night, without risk. Indeed, no direct admission of the external air into the apartments of the house can be endured during at least eight or nine months of the year, in fact, the great prevalence of cold, searching, and shrivelling east wind renders such an admission absolutely dangerous, so that no kind of arrangement of openings directly to the out-of-doors air, such as drawing down the window-sash, perforated bricks or gratings in the wall, perforated or louvred square in the window, the wire-gauze at the top of the window-sash, patent ventilators, or any other contrivance that communicates directly with the out-of-doors air, can possibly answer for ventilation in a country like ours. In this country, where eight or nine out of the twelve months in the year are cold, windy, and wintery, houses should be built with reference to winter, and not with reference to summer; and they should be planned and built with the object of keeping out the cold air and not with the object of letting it in; ventilation should be provided for specially; and in making this provision it should be borne in mind that we are living at the bottom of an ocean of air, and that the same manipulation is required as though we were living at the bottom of an ocean of water, and were endeavouring to make it come in at the bottom of the house and go out at the top in a continuous stream.

From the foregoing remarks it will be seen that I maintain that ventilation is the great and main necessity of house-building; and that whatever else may be left undone this should be attended to; and whatever else may be left imperfect this should be made perfect and complete; and that it should include the whole house; and should be self-acting and inexpensive. It should, I repeat, be perfect and complete, include the whole house, and be self-acting and inexpensive.

Ventilation is the point for discussion between the architectural and medical professions, for it is here in particular that their duties meet and combine; the education, knowledge, and experience of both professions are wanted here. However much the medical man may be impressed with the absolute necessity of rooms and houses being ventilated, he cannot himself provide it,—this must be done by the architect; and, on the other hand, the architect cannot be expected to provide flues and tubes, which involve extra expense, except under the certainty that they are absolutely necessary, and required arrangements involved in the plan of every house. But there is a third party interested in this subject, namely, the public. The public are, after all, the “yea” and “nay” in this matter; it is, indeed, for them that these arrangements are to be made, and they are the paymasters. Whatever extra cost is involved, it is the public that will have to pay it; and it is of little use for a doctor to prove the necessity, or for an architect to design the arrangements, unless the public be persuaded to adopt them, and pay the cost involved. That the public can be thus persuaded I have no doubt, but that this will take some time I am equally ready to admit. It will take some time thoroughly to educate the public into the absolute necessity for special provisions for ventilation, because they have hitherto been left under the impression that special arrangements for ventilation are unnecessary and superfluous, or that they are impracticable, or at least incompatible with warmth and comfort; and I am sorry to have to add that they have been encouraged in this impression by many architects and engineers, and that medical men have gone on from generation to generation silently mourning the resulting evils of the want of efficient and practicable means of ventilation, and architects have continued to design houses with very little regard to these absolutely necessary provisions; whilst the public have submitted, and if they have not thought it was all right, have at least thought that the evil was quite beyond their remedying, because every amateur (if not every professional) attempt hitherto made had only ended in failure, disappointment, and loss of money.

THE CORPORATION AND THE GAS QUESTION.

In reference to a notice given by the Alliance and Dublin Consumers' Gas Company that they intend to apply to the Board of Trade for a provisional order, under the Gas and Water Facilities Act of last session, Mr. McEvoy, the Chairman of the Kingstown Commissioners, writes to a daily contemporary:—

“The act now proposed to be utilised by the company was passed for the purpose of relieving gas companies from the obligation of continuing to supply at prices become unremunerative in consequence of the advance in the price of coal, iron, labour, &c.; but this relief is obtainable only upon proof (quoting from memory) that 5 per cent. dividend cannot be realized, although the management is good, and not chargeable with leakage of gas, or waste or extravagance of any kind.

“To establish their case, it would appear the Gas Company must adopt the line of argument of the opponents of the late bill. But what will the Corporation do? Will that body again come forward to prove that gas need not be raised in price, or deteriorated in quality, all that is needed being the carrying out of the small improvements recommended by Messrs. Church, Stevenson, Romans, &c., improvements costing but £15,000, but which would enable the Company or Corporation, supplying gas

at present rates, to earn a dividend of 10 per cent. at least?

“The public may look forward with some degree of curiosity for the next move of the Corporation.”

There are two courses open to the Corporation—submission or opposition. The latter will be resorted to, to the great delight of others, beside the professional advisers of that body, that is, if money sufficient can be squeezed out of the City Estate. If the public could be furnished with a faithful report of the inquiry into the late management of the gas company, it would throw a flood of light on the belongings and surroundings of the defeated Corporation Bill of last session. The late directors were honourable men; the shareholders in the Corporation, who were parties to the sale of the gas-works, were honourable men. Brutus was an honourable man. Did he not come forward, like a wise, a skilful general, at the eleventh hour, with moistened eyes, to save the pockets of the unfortunate ratepayers? It could not be his love of gas, forbid the word. “O virtue, thou art but an empty name, I have worshipped thee as a goddess, but thou art the slave of fortune.”

On Friday, a special meeting of the corporation, pursuant to requisition, was held to consider the notice given by the Gas Company “and to do, or cause, or direct to be done, all necessary acts thereupon.” Mr. John Byrne entered into a lengthened statement as to the cost of gas supplied to the city, and also, as to the present position of the company. He said it was a matter deeply affecting the citizens, because if the Gas Company's application was granted, the cost to the gas consumers of Dublin would be something like £52,000, or more than equivalent to the entire bulk sum of the 2s. improvement rate. He moved the following resolution, which, after a stormy debate, was carried by a house composed of twenty-three members out of the sixty:—

“That this Corporation have read with much surprise the notice referred to in the requisition convening this meeting. That the reports and evidence of the several eminent gas engineers—which are printed by the order of the House of Commons as part of the proceedings before the committee of that House upon the Dublin Corporation Gas Bill 1873, and the report issued by the committee of shareholders—fully warrant us in assuming that if the affairs, business, and management of the Alliance and Consumers' Gas Company were conducted and carried on with average care, prudence, and skill, a fair and highly remunerative dividend would not only result to the shareholders, but, under the statutes of the kingdom, a reduction in the price of gas should be made to the consumers. That John Smith, Esq., the law agent, in the event of the company proceeding under said notice, he therefore hereby directed to prepare and lodge forthwith with the Board of Trade the objections of this Corporation to the application of the said Gas Company set forth on the said notice, or any part thereof, being complied with, giving the said evidence and reports above mentioned as reasons (amongst others) upon which our objections are founded; and that he be hereby authorized to appear by counsel upon any inquiry deemed necessary by, or decided by, the Board of Trade in this matter, as also in the preparation of the said objections, and that the same, when prepared and engrossed under the directions of the No. 1 Committee, shall have attached thereto the city seal (which attachment the Town Clerk is hereby authorized to make), and shall be duly lodged with the Board of Trade, within the proper limit, by the said law agent.”

THE ELECTRIC LIGHT.*

It will be in the recollection of the readers of the *Journal*, that, in April last, an analogy was pointed out between sunlight and the electric light, and that certain conditions were therein indicated as being most favourable to that particular development of light which would best bring out the separation of the power producing the light from the place of its manifestation. Those conditions were the employment of magneto-electricity, and the use of a closed incandescent conductor in an atmosphere which would not oxidise or otherwise affect the durability of the light-producing material. From the quotation from the Russian paper *Golos* which follows, it

* From *Journal of the Society of Arts*.

will be seen that the results anticipated are even now in the course of realisation, and all that practical men can do is, to wish the plan the success it seems to deserve, and to wait the result of the further exhibitions of its power in London and other places more accessible to the Western nations than St. Petersburg:—

“On Tuesday, the 8-20 of May, a most interesting trial was made for the first time in public at the Admiralty House, St. Petersburg, under the auspices of Messrs. S. A. Kosloff and Co., the proprietors of the patent, of a new system of lighting by electricity, the invention of Mr. A. Laduguin of that town.

“Up to the present time, as is well known, the electric light has been used only for light-houses, as an electric sun illumination for signals, or on the stage, where a strong light may be required without regard to cost; but thus far it has been quite impossible to employ it for lighting streets or houses.

“The disadvantages attending this mode consisted in the facts, that, for each light a separate machine was required, and that the light so obtained, although very powerful, was impossible to be regulated besides being non-continuous, owing to the rapid consumption of the charcoal points from exposure to air.

“All these difficulties, Mr. A. Laduguin has tried and apparently overcome most successfully.

“By his newly-invented method, only one piece of charcoal or other bad conductor is required, which being attached to a wire connected with an electro-magnetic machine is placed in a glass tube from which the air is exhausted, and replaced by a gas which will not at a high temperature combine chemically with the charcoal. This tube is then hermetically sealed, and the machine being set in motion by means of a small steam-engine, the charcoal becomes gradually and equally heated, and emits a soft, steady and continuous light, which, by a most simple contrivance can be strengthened or weakened at the option of those employing it; its duration being dependent solely on the electric current, which of course will last as long as the machine is kept in motion.

“Taking into consideration the fact that one machine, worked by a small three-horse power engine, is capable of lighting many hundreds of lanterns, it is evident what an enormous advantage and profit could be gained by the illumination of streets, private houses, public buildings, and mines with the new electric light. In the latter it must prove invaluable, as no explosion need ever be feared from it, and these lanterns will burn equally as well under water as in a room.

“Without mentioning the many advantages this mode of illumination has over gas, which by its unpleasant odour and evaporation is slowly poisoning thousands of human beings, and from which explosions are frequent, we can state that by calculations made this electric light can be produced at a fifth of the cost of coal gas.”

HOUSE-BUILDING EXTRAORDINARY.

“WHATSOEVER ye do, do it quickly,” is a very pleasing and satisfactory motto, but one which, heretofore, has been looked upon as a thing more to be desired than attained; so far as building operations are concerned; but, like many other “wise saws and modern instances,” is being exemplified by the skill and energy of the present generation of architects and contractors, as within the grasp of those who are willing and able to put their shoulder to the wheel, instead of calling on the “gods or parliament” to help them. In April of this year, Mr. W. Shaw, M.P., decided on having a marine villa erected at Coolmain, on the southern coast of the County Cork, a delightfully retired spot where he could recruit in quiet retirement his energies after the turmoil of the London season of legislation and labour. Gentlemen of this type are accustomed to think that the erection of a mansion can be accomplished with the same facility as the passing of a “bill,” and so arranged to come over and occupy it in August. Of course he had not the slightest idea that he could do so, but was agreeably disappointed to find his house fit for occupation, and has actually been living in the place since the breaking up of parliament. The building is a ten-roomed house, executed in concrete by Mr. James Hunter, builder, of Bandon, from the design of Mr. N. Jackson, C.E., and architect, County Surveyor of the West Riding of the County Cork.

THE IRISH PEAT COMPANY.—The works of this Company at the Hill of Down, which, for some weeks were suspended in consequence of an outrage upon some of the officials, have been again put into operation. The lesson learned by the labourers during even this temporary cessation of the works will, we hope, have a beneficial effect, and that no further interruptions to the carrying on of an enterprise which is likely to confer great benefit on this country will take place.

The Glasgow Corporation Gas Committee have recommended to the Town Council to increase the price of gas from 4s. to 4s. 7d. per 1,000 cubic feet.

IN MEMORIAM.—A memorial tablet to the late Rev. Dr. Rutledge, Rector of Armagh, who for eight years was Rector of Derryvallen, is about to be placed in the church of the latter parish as a testimony of the appreciation in which he was held. The design is a tablet set in a slab of dark marble, surmounted by a draped cinerary urn, the expense of which is nearly all raised by subscription of the parishioners.

BUILDING IN COLERAINE.—There are at present completed, or in course of construction, the large number of sixty-one new houses in Coleraine and suburbs, the foundations of which were all laid since the beginning of summer. Several of the houses are intended for business purposes, and are large and elegant in their proportions, but the majority are suitable for the artisan and labouring classes.—*Chronicle.*

THE PRICE OF GAS.—A notification has been issued by the manager of the Enniskillen Gas Works, that the price of gas will be raised to private consumers, on and after 1st October, to 7s. 6d. per 1,000 feet.

BATH.—The great extension of the demand for Bath stone during the last few years has led to the apprehension that the existing quarries would soon be exhausted. This apprehension has been dispelled by the discovery of a large extent of building stone in the neighbourhood of Corsham, which is now being opened by Messrs. Randell and Saunders. The quantity is sufficient to supply the existing demand for half a century. It will be connected by railway with the Great Western system.—*Bristol Daily Post.*

NEW PROCESS OF IRON-MAKING.—This process, which dispenses with the blast furnace, has been practically tested, and specimens of its produce shown at Wolverhampton. The bloom is made direct from the ore, which, it appears, is ground, mixed with lime and pitch, and baked in a coke oven. This is treated as pig iron, and, a furnace being charged with it, it is ready for the helve or the squeezers in half an hour. The inventors claim that by their process they can make a ton of finished iron from the ore at an expenditure of only two tons of coal; that they can make German steel as cheaply as cast iron, and can besides make the latter equal in purity to charcoal iron.

BATHING IN THE PARKS.—The scandalous neglect of the opportunities which all our London parks offer for making convenient open-air bathing places is now more evident than usual. Every evening thousands of ragged youths congregate on the banks of the Serpentine waiting for the signal to bathe at half-past seven. For some time after this hour, the already filthy water is as thickly crowded with "featherless bipeds" as many a sea-pool with shrimps. There is no bathing place in any of our wide West-end parks but this, and during the whole of the long sunny day—from eight in the morning till nearly eight at night—the hours in which bathing is most enjoyable, it is necessarily prevented here. The wonder is, that with our vast extent of park grounds, offering admirable sites for the foundation of shrub-and-tree-curtained bathing places, nothing whatever is done. It can scarcely be from want of means, as these seem to be so ample now for providing our parks with less important things than bathing places—the villages of glass-houses, for example, which are growing up in Hyde Park and Battersea. Free open-air bathing places, open at all times, and properly screened with a belt of plantations, would be the greatest boon which the parks could furnish to the people of London. There is no convenience of any kind on the banks of the Serpentine, so that between the water, filthy from all London crowding here, and the equally filthy banks, thousands are prevented from practising an art which conduces so much to health and wholesome pleasure and cleanliness, and which is more important for the population of large towns than any other exercise. The making of bathing places in our parks need be attended by no difficulties worth naming, and these, if judiciously placed and planted round, would not interfere with the uses of the parks or lessen their beauties in any way.—*The Garden.*

NOTES OF WORKS.

The new parish church of Aghadown, Diocese of Ross, has been consecrated. It occupies a commanding position on a site granted by John R. H. Becher, Esq., of Loughine. It is a handsome edifice in the Early-French Gothic style, consisting of nave, transepts and chancel. It has been built by Mr. Thomas Pemberton, of Dublin, under the superintendence of William Hill, Esq., diocesan architect, according to plans supplied by Henry and Arthur Hill, Esqs., of Cork. A beautiful stained-glass memorial window adorns the east end, the generous gift of The O'Donovan.

The new church of St. Jude, Ballynafeigh, Belfast, has been consecrated. The site was given by Mr. Fitzpatrick. The building is calculated to seat 400 persons, and has been erected at a cost of about £3,000. Mr. Thomas Drew was the architect.

TO CORRESPONDENTS.

TOWN SKWAOK.—There are large tracts of unproductive land in this county which could be irrigated and rendered productive instead of being mere waste. If our Main Drainage system was completed; but our sapient Corporation prefer farming the City Estate to all other kinds of husbandry.

PEAT CHARCOAL.—The subject is alluded to in present issue. Other portions of the subject will be treated anon as opportunity offers.

RAILWAY ACCOMMODATION.—Our railway companies are not entitled to unqualified praise for the small concessions they have made in respect to certain shows and exhibitions. When works of native industry require facilities for development, and the working classes in the matter of expedition and cheap travelling to and from the centres of their employment, the railway companies render no assistance.

JUSTICE.—The Lord Mayor is quite as amenable to the law as yourself. The fact of his being the Chief Magistrate of the city makes not the least difference. The Corporation *in globo* can be proceeded against, of course.

A SANITARY INSPECTOR.—Send your name and address, and we will publish your letter with any cognomen you like to sign.

ANCIENT LIGHTS.—If they can be proven to be such, and that the opens always existed, and were not the creation of a recent date, you are entitled to claim compensation.

Some notices of magazines, and other works, along with correspondence and articles, are held over.

Lam's bean's aboo.—All to hand safely. Many thanks.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette.* Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPE & CO., Homoeopathic Chemists, London."

MANUFACTURE OF COCOA.—"We will now give an account of the process adopted by Messrs. James Eppe and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—*Cassell's Household Guide.*

NOTICE.

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We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

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The Irish Builder.

VOL. XIV.—No. 330.

The Empire of Architect and Engineer.



N a previous article—"The Future of Architectural and Engineering Practice"—we spoke of probable contingencies in these kingdoms in regard to the architectural and engineering professions. Circumscribing our view to the British Islands for the present, and looking ahead as far as the mind can penetrate

with a practical reasoning and deduction, we fully believe the conclusions we arrived at will be proved sound. We hold that it would be desirable that the professions of the engineer and architect were united as of old, and that modern society would be the gainer instead of the loser by the amalgamation. If Great Britain is to afford a home to a future race of engineers and architects worthy of the name, whose practice will reflect honour on themselves and their country, while securing them a profitable remuneration for their skill, we see no better way of accomplishing that end than by united labour.

The architect and engineer of the present day occupy a far different position than their predecessors in these countries. A century ago, or upwards, in this island, architectural practice was at a low ebb indeed, and as a distinct calling the representatives were sparse indeed. Towards the close of the eighteenth century, however, this capital could boast of a few able architects and several minor ones, all of whom secured a fair share of patronage. The engineer, as a distinct profession, was then unheard of, the architect being always called upon to supply both wants. Inland navigation, harbours and docks, iron bridges, the water supply of cities, railway construction, and sewerage works opened up a new field for the practice of the modern engineer, apart from that of the architect. Long, however, before the advent of railways and works of iron construction, canal systems, aqueducts, water works, harbours, lighthouses, breakwaters, and docks were projected and successfully carried out in the British Islands by architects and practical mechanics. Of foreign architects who were able engineers, it is again unnecessary to speak, as we already mentioned the names of a few of the most prominent in modern times. The name, however, of Leonardo da Vinci may be pointed to again as one who not only excelled in both professions, but also embodied that of the painter and sculptor. He constructed the famous aqueduct that supplies Milan with water. Locks are said to have been first introduced in the fifteenth century, and owe their adoption to the practical sagacity of Da Vinci.

The first stone lock in Ireland was that on the Newry Canal, the construction of the lock being the work of Richard Castles or Cassell, the architect of the Rotundo Lying-in Hospital, and the Duke of Leinster's mansion (now Dublin Society House), Kildare-street, and many other important works.

The same architect, long before this city had systems of water-supply, save by the means of conduits, published an essay on the best way of supplying Dublin with water.

Throughout the entire eighteenth century engineering works, so called, with slight exceptions, were carried out in these kingdoms by architects. Clever craftsmen, both in the last century and early in the present, have, betimes, by their extraordinary genius and skill, supplied the places of both architect and engineer on works of inland navigation, bridge construction, and many other works allied to architecture and engineering. The great spread of education and knowledge within the last half century has effected an entire revolution in the pursuit of the professions under notice. Practical sagacity, in itself, is not the only qualification needed on the part of an architect or engineer, or even an artizan. The latter, as well as the two former, is fastly becoming an educated workman, and not one merely depending for his information upon precedents or personal experience. The building workman particularly is ceasing to work any longer by "the rule-of-thumb," like his predecessor. The artizan is becoming a draughtsman and a designer, as well as a worker; and is every day growing less and less dependent upon the instruction of his foreman or employer. This spread of knowledge will be of great service not only to the workman himself, but to the future practice of architects and engineers. A large share of that knowledge which is indispensable to the pursuit of both professions will be found in the future among that class who may be truly called the executive class, as the former are the designing class. Both the architect and the engineer, apart or combined, should be both educated and practical, and possess as much intimate knowledge of how a design is worked out in stone, brick, timber, or iron, in practice, as it has been thought out as a plan on paper. A wide general knowledge, as well as a sound mathematical knowledge, is indispensable to both architects and engineers as designers or constructors; and if it is indispensable to the practice of each, who can deny but a fair share of the same knowledge is requisite for the workman, who has to carry out the designs of both?

When the young architect or engineer serves his articles, he commences practice, if he can procure it. The first design of either may barely save the constructor from disgrace—it may be the making of him or the unmaking of him. Much often depends upon the contractor and his experienced workmen whether the work passes muster or not. The engineer or architect's office is not the finishing school of their pupils, no more than the master builder's workshop is that of his apprentices. The journeyman stage of practice is in a manner to be gone through both by architects and engineers as well as operatives.

We fear we are digressing from our starting point, but it has only been to show other matters which hinge upon the question which the rapid spread of technical education among workmen is bringing about, and will hereafter bring out more prominently. We are advocates for technical education among all classes of workmen, and building workmen particularly. The more practically educated the artizan, the more admirable his work, if he has a love for his calling, and his employers do not demoralize him. There is no safety for the credit of architects or engi-

neers in the existence of a bad class of workmen; and it should be the aim of both professions to help on every object tending to develop the practical and artistic ability of those on whom the proper execution of their work depends.

Except in works of iron construction, the same class of workmen, to a great extent, are to be found upon engineering works as upon architectural ones. There is, undoubtedly, solidity and strength in most of our modern engineering works, where iron has been employed; but with few exceptions there is a complete absence of beauty. Many of our modern engineers are highly educated; and while some of them plunge deeply into science, they seem to utterly ignore the principles of art. Our iron railway bridges, roofs, and other constructions in iron, though framed on scientific principles according to the theory of strains and working loads, yet they are positive eyesores as structural erections. The advent of the railway era brought us some very handsome oblique bridges, the work of architects and engineers; but our railway engineers soon grew tired of stone, and have been treating the last generation to a succession of frightful examples in iron. Architects are, and have been for a few years, utilizing iron in several ways in house building, and in an artistic as well as a useful manner. The works of our old engineers, who were architects, show that though they loved strength, they loved beauty and harmony too, and that both were combined in their successful performances.

If the two professions were once more combined, a generation or two would develop a series of works to feel proud of. The two professions would be a power in the land, and the future of architectural and engineering practice would create an empire of its own that would stand unmoved through the changes of centuries.

THE USES AND ABUSES OF OUR MUNICIPAL INSTITUTIONS.

A LONG acquaintance with the practices of municipal councils, local boards, and vestries, convinces us that they have failed in their offices, and must fail until a Municipal Amendment Act is passed that will confine their proceedings to the special business for which they are intended.

In the case of Dublin, no more miserable example exists in the three Kingdoms of perverse rule and absolute incompetency. Purely civic and local matters, from one end of the year to the other, are unattended to, while every opportunity is seized for the promotion of political and religious objects favourable to the views and interests of a faction. We are bound to confess that the citizens, as a body, are greatly to blame for the demoralizing state of things as they exist. They possess the power in their own hands; yet year after year they submit to be hood-winked by the specious promises of representatives and the organs of opinion, which for wise reasons of their own support the canvass of those who they are benefited by in return. Works of public improvement are projected often enough, shelved, and again taken up at convenient times; but no progress is made, and consequently there is no results, save the worst.

The uses of municipal councils are plain enough; but the only duties performed by ours are the exercise of their taxing and borrowing powers to carry out jobs, patent and

incontrovertible. If any one doubts that this is the fact, let him run his eye over the last corporate balance sheet, or the preceding one, and see the huge sums that have been squandered in law and parliamentary costs, with the object of carrying out sinister bills, or opposing others, the passing of which latter would not have made the condition of the city a whit worse off than at present. The majority of the Corporation measures, *per se*, have been ruinous to our city, despite that in principle that some of them were good. The late Gas Bill is an instance of how a measure, which under other conditions might prove a service to the citizens, was framed with the secret and unmistakeable object of serving a number of individuals at the cost of the rate-payers. Here we had an instance of several of our local representatives banding themselves together to serve their own interests by plundering the citizens. The ambition of a faction on this occasion overleaped itself, and collapse was inevitable.

The affairs of the Dublin Gas Consumers' Company, since the failure of the Corporation bill, explains much; but there are further revelations yet to come. In vain our Corporation have been called upon to bestir itself in the interest of the public health, but nothing is undertaken or performed worthy of the name of duty. Epidemics succeed each other with startling constancy; fever, small-pox, and other zymotic diseases generated by the filthy condition of our city; and when the worst looms, a spurt is made at the eleventh hour to contract the spread of the evil that should have been prevented at first. Convalescent homes are projected, floating hospitals are talked of, ambulances are spoken about, tenders for the erection or provision of all, as well as the long-delayed Main Drainage scheme, are advertised for, meeting after meeting is convened of "no house," reports are ordered, and when through the mercy of God the epidemic has exhausted itself, the consideration of all the above matters is referred back to committees, where they generally remain until the next occurrence of an epidemic.

Time was in this city when men of rectitude and honour would shun the "deep damnation" of such advocacy and contact as that which signalises the proceedings of our present Corporation. It is plain to every one of common sense that the citizens of Dublin are not represented in our municipal council, that the vital interests of the city and its inhabitants are totally and absolutely neglected, and that the only interests that are attended to are those of a party, and those comprising that party. We have repeatedly protested against the introduction of politics and religion into the Corporation, and both inside the Town Council and without it, a few outspoken members have done the same. The unsanitary condition of our river, and the numerous back streets, yards, courts, lanes, and alleys of this city is abominable. No stranger who visits our city, and walks through its leading thoroughfares, has any conception of the deplorable state of homes and tenements where the masses of our poor and working population are housed. The water supply of Dublin is praised and be-praised until it is positively sickening to hear the panegyric. There is a reason for all this which it is not hard to divine, considering what the project has cost the city, a huge sum, and that financial matters in respect to our water-works are still in a deplorable muddle.

The value of a good water-supply to such a city as ours is a boon indeed; but it is a boon which it is at present robbed of half its value on account of our want of a system of sewerage, and the filthy condition of our streets, and the homes of our people. Our system of sanitary inspection is little better than a farce, and we know it is a fact that some of the greatest offenders and violators of our sanitary laws have been members of the Corporation. Our officers of health—medical and lay—have been aware of this, yet, as was to be expected, they shrank from reporting the nuisances nursed on the premises of men for whom they were publicly acting as servants. In many cases our inspectors of nuisances are afraid to do their duty; they could not think of bringing to the bar the very men to whom they were indebted for the votes that secured them their appointments. This is a sad state of matters, but it is a no-wise singular one, for we have known the same evil to exist in more local boards than one.

There is another evil in local representation in this city that ought to be got rid of, and which deserves the attention of the Local Government Board. This is the system of divided sanitary authority. Either the Corporation, the Boards of Guardians, or a distinct sanitary board should have the entire control of sanitary matters, instead of dividing the duties between any three bodies. Here in Dublin we have a number of the same individuals, members of the Corporation and of the Boards of Guardians. The policy of opposition, or advocacy, that is carried out in one place we too often find is carried out in the other; and the evil doers in the Town Council are still to be recognised as the evil doers in the Unions. If it becomes necessary on the part of a clique in the Corporation to foment a political or religious quarrel, it is felt necessary on the part of the same individuals as guardians to do the same. Under such a system as this, it is almost impossible to think that any good can be accomplished. The care of the poor is but a secondary consideration with many of our poor-law guardians, and it is precisely so in the Corporation in the matter of the poor and the public health.

"Corporate Reform" was a popular cry upwards of thirty years ago, when so-called "rotten corporations" stood in the way, and a new bill was in preparation. There are many hale and healthy citizens alive who remember the old Corporation, and recollect well the career of the new body. As to rottenness and corruption, the present body, when compared with that of 1839-40, would undoubtedly carry off the palm in many ways. Modes of corruption in former days were more open, but the villany of these days is veiled. Wheels now are moved within wheels, and men can plunder by proxy, and shew clean hands when the Government Auditor is on his rounds.

We would regret to see the extinction of institutions which have so long formed a noble chapter in our history, the progress of civilization, and the development of our early crafts, trades, and manufactures. Reform is again necessary; but if reform is impossible, a new formation is indispensable. If a limb mortifies, amputation becomes necessary; if a branch grows rotten, it must be lopped off, that the tree may not perish or be permanently injured.

Municipal institutions, with their present powers and privileges, are fated to pass

away at no distant date if a healthy reform does not set in, or is not instituted in their favour. The return of honest, educated, and practical business men is needful; and until representatives are returned by the citizens, honourable and upright in their intentions and advocacy to serve the common weal instead of their own personal interests, corporate bodies will still continue to deteriorate, until they positively stink in the nostrils of the people, and are removed as an incubus and a nuisance.

THE SANITARY CONDITION OF HOWTH.

THE subject of the sanitary condition of Howth came on for discussion at a meeting of the Guardians of the North Dublin Union last week. We have been for many years aware of the bad state of many of the houses in that town from the want of proper accommodation. Several of the dwellings of the poor are ill-constructed, and scarcely habitable. Were it not from its healthy position, exposed as it is to both the sea and the inland breezes, Howth would have long since suffered severely. The town is well situated for effective drainage; indeed its incline in different directions effects a natural drainage seaward. At the meeting referred to—

Mr. M'Grane, nuisance inspector, reported that in two cases where the occupiers of small houses in Howth had been directed to provide sanitary conveniences to their dwellings, nothing had been done. One of the houses belonged to Lord Howth, the other to a fisherman. The chairman said, in a narrow street leading up to the Hill of Howth there were not less than thirty small houses, all destitute of sanitary appliances. This was a very serious matter, and the board, with the view of having the necessary improvement made, selected the two houses in question, and directed the occupiers to build the necessary offices to each. No step, however, had been taken. Mr. Sullivan thought the board ought to insist upon their order being carried out. Mr. Fitzsimons was of opinion that if such a course was to be adopted they should commence with the earl and end with the poor man. Mr. M'Grane observed that there was no ground attached to the house belonging to Lord Howth; to the other building there was. Mr. Arkins said the Howth fishermen were honest, hardworking, industrious men, whose labours in catching fish were very beneficial to the people of Dublin, especially the poor. For over thirty years he had been a guardian, and previous to this no complaint had been made respecting the dwellings of these men. Nor would there be now were it not that building operations are going on in the neighbourhood. He denounced the present proceeding as an attempt to root these poor men out of their homes. Mr. O'Neill, Mr. Kane, Mr. Thorpe, and other guardians, including the chairman, spoke of the danger of allowing some thirty houses in one street in Howth to be without proper sanitary conveniences. Mr. Sullivan deprecated the motives attributed by Mr. Arkins, and contended that in the interests of the poor people themselves, they should be compelled to observe the sanitary laws. Morality and the public as well as private health required it, and the board should insist on it in the case of the peasant as well as the peer. He moved that the order of the board be enforced in both cases within a fortnight. Aldermen O'Rourke seconded the resolution. Mr. Arkins protested against its adoption. There were hundreds of houses on the north side of the city without any such offices. The resolution was adopted.

While agreeing with Mr. Arkins that there are hundreds of houses not only north but south of the Liffey in as bad, and even a far worse state than those of Howth, we altogether dissent from his ill-conceived remarks. It is quite true, as Mr. Sullivan said, the public as well as private health, and morality, required that sanitary precautions should be enforced. We have a divided sanitary authority now; but between the two-legged stools the poor are likely to come to the ground, and remain there.

THE BRITISH ASSOCIATION.—The forty-third annual meeting of the British Association for the Advancement of Science, will be held in Bradford commencing on the 17th inst.

IMPROVEMENTS AT ST. PAUL'S CATHEDRAL, LONDON.

WITHOUT, as well as within, St. Paul's Cathedral considerable improvements have been in operation for some months. As regards the decorations in the interior there are, of course, second opinions as to whether they are really improvements or not.

Without the Cathedral, at all events, there is a decided public and street improvement taking place. Everybody knows the enclosure, protected by heavy iron railings, which lies at the west end of the cathedral, facing Ludgate-hill, where the statue of good Queen Anne looks towards her old residence at Kensington. In a few weeks the railing will be removed, and almost half of the enclosure thrown open for the use of the public. The fact is that the Corporation pay to the cathedral authorities the sum of £15,000 for an irregular piece of ground for the purpose of widening the most important thoroughfare in England; and out of this amount the dean and chapter pay all expenses within the new enclosure. At present a portion of an irregular ellipse sweeps round the west front: now it will be regular with a shorter axis. No less than forty-eight feet will thus be thrown into the carriage way at the most westerly point, and about eight feet will be added to the roadway on the south of St. Paul's where the pressure at present is the sorest. The Corporation will use four feet of this as a footpath, but the other four feet will suffice to make the roadway wide enough to allow four of the widest wagons to pass abreast. Whether the further plan of the Corporation, the removal of the railings right round St. Paul's, so as to admit a greater breadth of roadway, which is here already practically wide enough, will ever be carried out remains to be seen, but there can be no doubt that the present alteration is one of the greatest boons yet conferred upon the City public, for, even without the roadway on the north side being made available for public purposes, this widening of the roadway will prevent the block which now frequently occurs opposite the entrance to Dean's Yard, and consequently will facilitate access from the west to the east, and *vice versa*, especially when, as will be the case in about a fortnight, Ludgate-hill is repaved with wood, with which, or asphalt, all the streets of the City will be covered as opportunity serves or repairs require.

When the old railings are removed, what the London public will see will be recognised as a great artistic improvement. The old high hideous railings, of the true type of the worst period of Italian art, will not be moved back, but removed altogether, and in their place will run, right in front of Queen Anne's statue, thence curving northward and southward to the corners of the cathedral, a low open iron railing of artistic design, and not more than 4 ft. 6 in. in height, supported at intervals by low posts of red "shap" granite, with rounded heads. There will be no rail or gate, at the west in front of the statue—and access will only be hindered by a chain. The pavement around the statue, and up to the great flight of western steps, will be of granite, with bands of different colours, and octagons at the intersections of the bands. The greatest diameter of the half ellipse will be 170 ft. along the west front of the cathedral, and the distance from the new chains to the line of the west façade will be no more than 114 ft. 3 in. The steps, which, like the granite supports of the iron work, are already half-finished, are of grey Jersey granite, which will afford a pleasing contrast to the Scotch and Cornish stone used for the pavement. All day long it is intended that the western doors of, in one sense, the national cathedral shall remain open. At night, in order to prevent access to the portico, which might be used as a sleeping place by casuals, a railing will be wound up nightly, rising from the middle of the flight of steps. These, instead of being accessible only from the west, as the old ones were, will be more in accordance with the ascertained wishes of

Sir C. Wren, whose plan of the west front in the Library of All Souls', Oxford, will be followed in the new steps, which will be accessible equally at the north, the south, and the west. There can be no doubt of the value of the improvement both in an architectural and a utilitarian point of view. To the business of the City the boon will be great; to the beauty of the City it will be no less an appreciable addition, for now from any point above the Old Bailey one will be able to see Wren's greatest work as he designed it without interference from a heavy iron railing which cost £11,000 and which if it sells for half that amount will almost recoup the cost of its removal and replacement by a railing more in harmony with the designs of the architect. But the whole of the £15,000 will not be clear gain to the Decoration and Fabric Fund of the cathedral, to which it is to be devoted, for the works now in hand, exclusive of those devolving on the City in the space outside the new railing, will cost probably from £6,000 to £7,000; but no definite estimate has been made, as the plans have been changed more than once. Probably, what with the gain by the sale of the western portion of the large railing and the old marble steps, the cost of the improvement will be reduced to £2,000, but this is at present a conjecture. There will probably be at the least £11,000 saved from the City's payment towards the Restoration, or rather the Completion Fund.

TOPOGRAPHIA HIBERNICA.

In the last quarterly issue of "The Journal of the Royal Historical and Archaeological Association of Ireland," there are some very interesting papers by the Rev. John Francis Shearman and Eugene Alfred Conwell, M.R.I.A. The former contributes an account of the ancient cemetery known as "Killeen Cormac," situated west of Dunlavin in the County Wicklow, a deeply historic site hitherto little noticed; and a second paper, entitled "The Fine or Tribes of Leinster." Both papers are capital ones. Mr. Conwell's paper, "A Ramble Round Trim," is also an excellent and valuable one. Well executed illustrations accompany the articles of both writers, those in connection with Trim being very good indeed. Among the "Proceedings" are: notes of "Possessions of Templars in Ireland"; "Sheriffs' Lists returned by the Judges in 1644"; "O'Neil Monument at Kilskeery, County Tyrone"; "Petition of Edward Plunkett, son of the Earl of Fingal, A.D., 1656"; "Discovery of Ogham Inscriptions." We regret to hear of the total failure of the effort to enlist the support of the county and city of Kilkenny towards maintaining, arranging, and throwing open to the public the Museum of the Association. The response was so small, it was deemed prudent not to receive the subscriptions offered for the purpose. We have no doubt but that the time will come when not only the citizens of Kilkenny, but others elsewhere in Ireland, will regret their indifference and apathy in the matter. If ever a body of zealous labourers in Ireland deserved public support to enable them to carry out their praiseworthy objects, that body is the Irish Archaeological Association. There are many persons of rank and property connected with this country who could well afford assistance to the Association, and who, by rendering it, would not only reflect honour upon themselves, but upon their country. What would our history, and the monuments of our fathers have been in a few years if such associations existed not? Where is our boasted patriotism? If *pro aris et focis* be

the life of patriotism, said Berkeley, he who had no religion or no home makes a suspected patriot. A true love for our altars and our hearths embodies a love for our national monuments and their history.

SANITARY QUERIES.

Is it not true that the old cesspool system in cities is being exploded, and main drainage and sewerage systems are adopted, and that the results are shown everywhere in improved health and a decreased rate of mortality?

Is it not true that the contents of cesspools have been from time immemorial used on farms, market gardens, and for many agricultural and horticultural purposes?

Is it not true that modern sewage, which is a more diluted article than the former, has been used for similar purposes with a similar beneficial effect to the soil and the products of the soil?

Is it not true that mankind in these kingdoms subsist mostly on what comes from the soil and through the soil, and that what comes from the soil once more goes to the soil?

Is it not true that the earth is the great universal and purifying filter through which all putrefaction passes, our own bodies included, and that it only fails to perform its offices when man fails to do his duty by it?

Is it not true that the earth is a perennial farm and fountain of all healthy life and living, from the blade of grass and the ear of corn to the seam of coal and the crystal spring?

Is it not true that men stumble at a gnat and swallow a camel when they are actuated by other than lofty motives for the common weal, and that interested considerations are the ruin of society?

Is it not true that there is a proverb which says, "Conceit is as good for a fool as physic," and are there not cats and dogs who eat grass as well as geese and swans, the former as a medicine and the latter for food?

Is it not true that the world has long since heard that "What is one man's meat is another man's poison," and are we not aware that where the bee extracts honey the man extracts inebriating liquor or poison?

Is it not true that butter that is scalded when making gets rancid in a few days, and that hot water is often added in private and public dairies to hasten the churning?

Is it not true that the colour of butter is guided much by public taste, and that white and yellow quality, when not produced in the churning, is produced afterwards by the adding of other ingredients?

Is it not true that hundreds of milch cows are kept tied up in London dairy-yards from one year's end to the other, and that a mere partition often separates the cow-shed and undrained yard from the dairy?

Is it not true that at some metropolitan dairy-yards pigs, poultry, and dung-heaps, consumptive pumps and sunken vats for the drain of the sheds and other outhouses are to be found within a circuit of a few yards?

Is it not true that there is a most unhealthy combination of matters scarcely dreamt of by the noisy opponents of sewage farms and sewage grass?

Is it not true that ventilation and temperature are most important considerations in the management of dairies, and that, notwithstanding this knowledge the milk in our dairies is often left to take care of itself?

Is it not true that a large number of milch cows have been fed on sewage grass and sewage farm produce for the last few years in many places, with the best results, and what wherever complaints have been made they have been disproved, on inquiry, as groundless?

Is it not true that sewage is sewage and that grass is grass, and that there is about as much difference between the component parts of the one and the other as between the cow and the cauliflower, that may be found on the same pasture and utilised alike for the food of man?

Is it not true that dirt and uncleanness in air and aliments are the chief causes of epidemics, and that in the prevention of these causes will be found the cure and the personal and public safety?—*Builder*.

TENDERS.

For the erection of harbour offices on the Ballast-quay at Queenstown, Co. Cork:—

W. Hill	£1,186
R. Longfield	1,141
Richard Evans	1,100
Robert M'Sweeney	1,030
Terence O'Flynn (accepted)	695

B

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

[Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

In continuation we give Semple's observations on lime mortar and grout. Though simple in themselves, and devoid of all technicalities, yet the remarks of our old Dublin architect are very useful withal. As a connecting link with former and present practices in building operations they have a certain value also, as they illustrate the amount of knowledge that existed in those matters in the best informed quarters of the building community of the eighteenth century.

ON LIME MORTAR AND GROUT.

"Now let us suppose that a peck of roach lime was slacked into whitewash, and then mixed with two or three barrels of sharp sand, so that every individual particle of sand partook, and as it were, got a white coat of this liquid lime—such mortar that would only appear to be mere sand, supposing such could be wrought into mortar—would sooner harden and petrify either in or out of water, than if there had been ten times that quantity of lime made up with it, but, nevertheless, observe that I do not recommend that proportion of mortar, though it might answer for our present purpose extremely well.

"It is not within my province to account for the petrifying qualities of limestone, lime, or lime water, though I have often heard, seen, and read of several very remarkable instances of each of these; but it is sufficient for my present purpose that they have these petrifying qualities to great degrees, but all sorts of limestone have not this quality in the same proportion, yet I believe no limestone whatever can have more excellent qualities than such as we have in perhaps every county in the kingdom, and, indeed, it has some useful qualities not much known among the generality of workmen, as, for instance, our limestone will make exceeding good tarras for water-works, for which purpose you are to prepare it thus:—Get your roach lime brought to you hot from the kiln, and immediately pound or rather grind it with a wooden maul on a smooth large stone, on a dry boarded floor, till you make it as dry as flour, then, without loss of time, sift it through a coarse hair or wire sieve, and to the quantity of a hod of your setting mortar (which, on this account, ought to be poorer than ordinary), put in two or three shovels full of this fine flour of the roach lime, and let two men, for expedition's sake, beat them together with such beaters as the plasterers make use of, and then use it immediately. This, I can assure you, will not only stand as well, but is really preferable to any tarras.

"I will give you another instance which will be hereafter found to come within our subject, i.e., the making of cisterns in which tarras is generally used in ordinary works. Build all your outside and inside rows or courses with wet bricks, and with tarras mortar made as above directed, observing that your mortar is to be a little too soft for work, and then the heat of the lime flour will bring it to a proper consistence immediately, but never throw water upon it when you are beating it, for that will chill and slack your lime flour, which you ought to most carefully avoid; but make the men temper it with the utmost expedition, and what you want in water to make it fit for your work, give it in elbow grease, and this rule ought to be observed in making all sorts of mortar."

[A little more elbow grease in these times is desirable on the part of builders' labourers on the mortar bank; but to hint about elbow grease would now be considered treason, and might possibly lead to a "strike." Workmen do not now work by the strength of their arm, but by the length of the hour, and their general temper is infinitely stronger than the mortar they manipulate. As soon as the mortar gets stiff,

the bile of the bricklayer, or his labourer, rises immediately, and a shower-bath brings the "damned stuff" to a proper consistency for working. Elbow grease belongs to special operations where double pay for single time is an institution, and where "Come day, go day, God send Sunday," is the motto. Despite the introduction of mortar-making machines, good mortar is even still quite an exceptional matter. Though steam can supply enough of "elbow grease" for mixing and tempering mortar, it is of little consequence where the materials are bad. Common loam or road mud, or the riddled *débris* of old buildings, with a sprinkling of lime and a flooding of water is made to supply the general wants of modern building speculators who build to sell and to kill, and who laugh to scorn the idea of building for honour or posterity.]

"The grout which you lay your middle row with must be thus made (in a tub or bucket):—Pour your water on the roach lime, which must be pure, and well burned, very leisurely, and when it is boiling, you may strain it through either a wire or hair sieve, so as it may be tolerably free from stones, and then let it be used directly, and be sure your sand is sharp and clear, and when you are using it, do not take the thin that is uppermost, but stir it up, and take plenty of sand with it; but in mason work, when the outside and inside courses of cut stone are set, pour in this boiling hot grout, and instantly lay down your middle course of wet bricks between them, in double or single rows of stretchers, breaking joints, as usual, according as the largeness or smallness of the work may require, and that will press and squeeze the grout into all the inside pores that are next to it, and so they will all unite, and by the heat of the grout, and dryness of the bricks, they will all set together immediately, and become staunch and solid; but if you were making a cistern of rough stone, mix one-fourth of the powder of tiles, or well-burned bricks with your mortar."

[Some of our modern authorities on lime, sand, and mortar, do not speak favourably of the practice of using grout, or of grout, *per se*; but its value, we think, depends on the materials and the making. That grout has been used extensively in former times there can be no doubt, as our old churches, abbeys, and castles testify. That we have limestone in this country suited for all purposes there is no doubt—stone fitted for the burning and making of rich, poor, or hydraulic lime. We have materials in this country—clays which can be burned for the production of good artificial lime to resist the action of water in any position; and we have, also, in Ireland, an abundance of clays fitted for pottery, brick, and tile-making, as also ochres and painting earths.

Semples treats us next to a chapter on oak and fir timber, its use, and modes of preservation, giving some instances that come under his own observation of the durability and decay of timber in different situations.]

THE PRESERVATION OF TIMBER.

"We have very little timber now the produce of this kingdom of any kind, but large quantities of both oak and fir imported, on which two sorts I shall make a few remarks. Oak is generally allowed to endure all seasons and weathers better than any other sort of timber, and some people are of opinion that it is the best of all others in water. I know the pier or piles which we began to run out in the harbour [Dublin] about the year of 1728 have, long since, sufficiently proved that it was not by any means adequate for that purpose, though I do believe that there is not any country that produces better oak timber than ours, notwithstanding those piles rotted and decayed in a very short time, but whether that was owing to the nature of that particular timber, or to anything peculiar to our harbour I know not; but it is reported there is a sort of worm, that either breed in, or are nourished in these piles, that totally destroy them. There are, indeed, several methods that have been made use of to pre-

serve timber. Sir Hugh Platt informs us that the Venetians make use of one which seems very rational, viz., to burn and scorch their timber in a flaming fire, continually turning it round with an engine till it has got a hard black crusty coal upon it [charring]. Others inform us that the Dutch preserve their gates and portcullises, draw bridges, sluices, &c. by coating them over with a mixture of tar and pitch, whereon they strew small pieces of cockle and other shells, beaten almost to powder, and mixed with sea sand which encrusts and arms it wonderfully against assaults of wind or weather; but, for my own part, I conclude that the Venetian method is preferable, because, I believe, it is the sap that is either in oak or fir that is the principal cause of their decaying so soon; besides, that sap probably breeds and nourishes the worms that are natural to it, but there are not many worms peculiar to the water that I have ever heard of. Worms generally breed in the sap of all kinds of building timbers, and have a powerful effect on them, either without or within doors, and all old and dry soft woods breed them in great abundance, just as mites breed in cheese, and some of these worms are a quarter of an inch in length, and near a tenth of an inch in thickness; and in very sooty old cabins where soft woods are generally made use of they are to be found in great abundance. For these reasons you ought to be exceedingly careful how you make use of any sort of sappy timber, but particularly in all works that stand the weather, for the sap is of a corrosive nature, and for that reason ought not to be made use of, especially before it is a little seasoned in any work that requires to be durable.

"I know there are carpenters who pretend it is necessary to paint their work directly, and I admit that in some cases it may, but it ought to be done with judgment and not merely to varnish over and hide imperfections of their work. As the preservation of timber is a subject suitable to our present purpose, I advise you never to paint either green or sappy timber of any kind.

"When I was building the mansion of Ramsfort, one day after dinner Mr. Ram observed to his company that he had some time ago cut up some of his own fir timber into scantling, out of which he had a great number of field gates made, and that several of them that had been hung up near his house he had had painted immediately, but those that were at a distance through several parts of his extensive demesne were not painted; that those which were painted were all quite rotten, but those that were not painted continued firm. The company seemed surprised at the information, and Mr. Ram enquiring of me the cause of this apparent phenomenon, I readily answered that the painting of the sappy wood encrusted and confined the sap and prevented its being exhausted by the sun and weather, and being continued within it, preyed upon, putrified, and destroyed the hearty sound wood. As to the wood that had not been painted, the sun and weather consumed and exhausted its sap, and thereby rendered it of a proper consistence, and made it well seasoned. It is for this reason I advise against painting or otherwise encrusting sappy green wood, unless you have some very powerful reason for it."

[It is to be regretted that Semple did not give a list of the different buildings in which he was engaged or designed during his practice from before the middle of the last century until the date of the publication of his work in 1776. The Mr. Ram, of Ramsfort, alluded to, we believe was the personage, or his predecessor, celebrated in rhyme as "The great Ram of Gorey." There could be an interesting volume written on timber-destroying worms and moths, for the class of lepidoptera are a numerous family. We are all pretty well acquainted with the depredation of the death's head hawk moth, and the terror-striking tickings of that mysterious timber-boring beetle, the death watch. The last named insect (scamp) has kept the world

in hot water since long before the era of four posters and mangles. Our grandsires have died with their illusions undisputed, and it is not unlikely that when our great-grandchildren had grown into aged grand-parents, the death watch will still be frightening the weak-minded with the swing of his pendulum, proboscis, or hammer forehead. What Semple says in regard to painting wood while green or with sap is perfectly correct. Many of our cheap class of speculative buildings are constructed with unseasoned timber, and the bad results are to be seen in a few months, to the great discomfort and cost of the new tenants. Shrunk and gaping joints, split panels, doors and shutters nearly a half inch away from their rebates; sashes rattling in their cases or frames, and the wind whistling through passages and corridors with a moaning medley of the "Dead March," and "There's nae gude luck about the House." The jobbing carpenter and painter, or the 'three-branch hand' combined, comes with his slips of wood, lump of putty and paint-pot, and it must, indeed, be a large mouth that a pound of whitening and a twenty-penny nail will not stop for a while. Badly built houses are always a source of considerable income to jobbing builders and decorators. The latter class may well stand excused, but it is the original constructors who ought to be hunted down and gibbeted in the pillory or stocks. In sooth if all bad and rascally builders were tied like the dishonest bakers of old to the horses' tails, and dragged through the streets, it would only be a punishment they richly deserve.]

(To be continued.)

THE OPENING OF BRADFORD TOWN HALL.

The opening of the new municipal buildings at Bradford took place on Tuesday (9th), and was accompanied with a costly and magnificent ceremonial, which a continued down-pour of rain did much to spoil. The new hall was opened by Mr. Thompson, the Mayor of the borough.

The site, which is of an irregular shape, has an area of 2,000 yards; the principal front, towards New Market-street, is 275 ft. in length, and the height is 70 ft. The grand entrance in New Market-street is through a richly moulded, carved, and shafted doorway. Over this is a large and handsome oriel window, surmounted by a gable. Behind the gable, and rising from the centre of the building, is the tower, which is 28 ft. square, and 200 ft. in height, and the design of which is based on that of the Campanile of the Palazzo Vecchio at Florence. This front of the building consists of four stories, and on the buttresses, on the level of the third floor, are canopied niches occupied by statues of the monarchs of England, from William I. to her Majesty, and including Cromwell. The Borough Court is approached from the grand staircase, which, with the chief entrance, forms one of the most striking features of the building. On reaching the foot of the principal staircase, the visitor finds in front a picture illustrative of the legend of the wild boar of Cliff Wood, whose tongueless head was chosen to represent the arms of the town. The staircase is lighted from the ceiling and by windows on each side 30 ft. in height, all of stained glass, covered with designs and emblematic figures. On the second floor is the council-chamber, which is 40 ft. square, and is considered the most elegant room in the building. The Mayor's reception room is also a highly-decorated apartment. The tower contains a clock, carillon machine, and peal of thirteen bells. The latter, by Messrs. Taylor, of Loughborough, are said to be the largest peal ever cast in Europe, the total weight being 17 tons 3 qrs. 10 lbs., of which the great bell alone weighs 4 tons 7 cwt. The carillon machine is by Messrs. Gillett and Bland, of Croydon, the makers of the clock, and is at present fitted with three barrels, to play twenty-one tunes.

Messrs. J. Ives and Sons, of Shipley, near Bradford, were the general contractors for the building. The hall has been rather over three years in course of construction, the first stone having been laid August 10, 1870. It has been erected at a cost of £100,000.

A TRADES PAGEANT.

As part of the ceremonial to signalise the opening of Bradford Town Hall, a trades procession and demonstration on a very large scale was organised, the like of which was never attempted in Bradford previously. Nearly all the trades entered willingly into the project of the demonstration. The procession assembled in Manningham Park, and at about half-past eleven started for the Town Hall, the route lying through most of the principal streets.

Forty-six trades took part in the procession, most of them being headed by a band of music, and each having its appropriate banners, trophies, and flags. Along the line of march, scores of thousands of spectators had assembled, and nearly every building was bedecked with flags. The woolstaplers' part of the cortege included a man at work sorting wool and a string of eight decorated wagons laden with thirty kinds of that material. Then came a trophy drawn by six horses, on which was seated a representation of Bishop Blaize, the patron saint of woolcombers, and near him were a man shearing a sheep, and two men at work combing wool from the "padpost," just as they used to do in the days before the machine which superseded the hand labour was invented. After the woolcombers came a trophy consisting of wool used for spinning worsted yarns. Spinners followed, and showed on their trophy specimens of every description of yarns used in the Bradford trade. To them succeeded the weavers with a display of stuff pieces just as they come from the loom. Next, on a car drawn by four horses, came a representation of the Argo, with figures of Jason and Medea and the Golden Fleece. This was followed by the dyers, and next appeared a representation of Britannia seated upon a granite rock with the globe at her feet. Supporting the globe were four human figures dressed in appropriate garb, and personifying Europe, Asia, Africa, and America. Following these was an immense argosy, with rigging, furling sails, helm, and prow, brilliantly painted from stem to stern. This vessel was named the Enterprise. The linen and woollen drapers and the winding-board and packing-case makers completed that part of the procession which illustrated the staple trade of the town. The remainder was in the following order:—Lithographers, letterpress printers, butchers with Spanish oxen, a prize heifer, sheep, and calves; fishmongers and game dealers, brewers with trophies of hop vines, bags of malt, barley, sheaves, and casks of liquor; licensed victuallers, bill posters, skep and basket makers, coach builders, soap makers, carters and carriers, dramatic performers with a trophy representing scenes from various pantomimes, ironfounders with steam hammer, worsted machinery, &c.; boiler makers and iron shipbuilders, amalgamated engineers, gas meter inspectors, chimney-sweeps, quarry owners, and quarry men, masons and bricklayers, timber merchants, joiners, slaters, plasterers, plumbers, painters, marble masons, technical school teachers and scholars, rope and twine spinners, saddlers and harness makers, lamp-lighters, tanners and curriers, and tanners. The procession included many thousands of persons in vehicles, on horseback, or on foot. It was headed by the local corps of volunteers, clergymen and ministers, and professional men, and closed by carriages containing the mayor and corporation, and the guests of his worship, among whom were Lord F. Cavendish, M.P.; Mr. F. S. Powell, M.P.; Mr. Forster, M.P.; Mr. Miall, M.P., and the mayors of several neighbouring towns. The van of the procession reached the Town-hall a little before one o'clock, and it was half-past two before the Mayor arrived. His worship was received with great cheering by the

crowd assembled in front of the hall. The opening proceedings were very brief, and were conducted in a pouring rain. Bishop Ryan, Vicar of Bradford, offered up prayer, and Mr. Edward West then presented to the mayor, on behalf of the aldermen and councillors, a silver key. His worship unlocked the door at the chief entrance, and declared the Hall opened. A banquet given by the Mayor to a number of guests followed, and illuminations at night.

THE WHITWORTH ENGINEERING SCHOLARSHIPS.

At the suggestion of Sir Joseph Whitworth, the Lords of the Committee of Council on Education have announced certain important alterations in the conditions under which the scholarships in mechanical engineering, founded by that gentleman, are henceforth to be held, the experience in the past competition for the scholarships having proved to him the necessity of establishing rules which shall ensure that the holders of them shall devote themselves to the studies and practice necessary for mechanical engineering, during the tenure of the scholarships.

It is therefore resolved that, as soon as possible, that is, in the competition of 1875, every candidate for a scholarship shall produce a certificate that he has worked in a mechanical engineer's shop, or in the drawing office of such a shop, for two years consecutively. In 1874, nine months' consecutive work only in the engineer's shop will be required. The age of intending candidates will still remain twenty-two years, as at present. Each candidate will be examined in the appointed sciences, as also in smith's work, turning, filing, and fitting, pattern-making and moulding, as already established, and the same marks will be awarded as at present.

In 1875, and the following years, each holder of a scholarship appointed under these new rules will be required to produce satisfactory evidence at the termination of every year, that he has made proper advances in the science and practice of mechanical engineering, by coming up for an examination similar to that which is prescribed for the competition, both in theory and practice; and thus, although the scholarships may still be held for three years, they may be withdrawn at the end of each year, if the scholar has not made satisfactory progress.

The number of scholarships in the competition of 1874 will be reduced from ten to six. Each scholarship will be of the fixed annual value of £100, together with an additional annual sum, determined by the results of the progress made in the preceding year. Then, at the end of each year's tenure of the scholarship, the scholars appointed under these new rules will, as before stated, be examined in theory and in practice in the same manner as in the competition for the scholarships. On the results of this examination the following payments, in addition to the £100 before mentioned, will be made among each year's set or batch of scholars:—To the scholar who does best in the examination, £100; to the second, £60; to the third, £50; to the fourth, £40; to the fifth, £30; and to the sixth, £20, provided that each scholar has made such a progress as is satisfactory to the Department of Science and Art, which will determine if the sum named, or any other sum, shall be awarded.

At the expiration of three years' tenure of the scholarships under these new regulations, a further sum of £300 will be awarded, in sums of £200 and £100, to the two scholars of each year's set or batch who have done best during their scholarship. And in this way it will be possible for the best of the scholars, to have obtained £800, and the others in proportion.

The prizes of £100 down to £20 will be awarded according to the total number of marks obtained by the students in practice and theory, in the examination at the end of the year, and the prizes of £200 and £100

will be awarded by adding together the marks obtained by the students at the end of the three years.

The Whitworth scholarship prospectus will be revised in consonance with these regulations.

OUR ILLUSTRATIONS.

STAIRS IN A PALAZZO, SIENNA.

IN a land renowned for Art, the town of Sienna ranks high for the many objects it contains worthy the attention of the architectural student. We give this week an illustration of a Staircase in the Cortile of one of its Palazzi, sketched and measured by Mr. T. H. Longfield. One cannot fail to admire the simplicity of its construction, combined with elegance of detail and very dignified general effect.

ST. LUKE'S CHURCH, CORK.

As promised some time since, we now present a geometrical elevation showing one of the fronts of this building, viz.—that facing the road, or St. Luke's Cross. The design is by Sir John Benson, in conjunction with Mr. William H. Hill, the diocesan architect, who is now having the works carried out; and already very considerable progress has been made. The effect of the portions executed is most effective; and, as an architectural composition, decidedly good. Unlike very many designs of the present day, the building is better than the drawing.

The North-Italian-Romanesque (if we may use such a term) is the style adopted; and, as far as we can judge from inspection of an incomplete structure, with the best possible results. The space at the disposal of the architects was singularly irregular and circumscribed, and the utmost has been made of it. The new building is planned to extend to the limits of the ground on three sides, leaving the fourth—the eastern—for a future enlargement in that direction.

The old red sandstone of the neighbourhood, in punched random ashlar, is being used for the walling, with dressings of chiselled limestone; the internal dressings of Bath stone, and red marble columns, and the internal facings of walls executed with a very light salmon-coloured enamelled brick, with deep red bands and discharging arches; open timber roof of pitch pine, of flat pitch, supported on ornamental curved ribs, with a central dome at intersection of nave and transepts, and half domes over the apses—north and south. On the whole, the arrangement appears a very complete one, although an innovation on the "Established Ecclesiastical Commissioners' Plan," which has so long held sway in Ireland; but we are bound to admit that in many essential points of practical utility, the new St. Luke's will be found to possess many advantages over the stereotyped so-called Gothic buildings of the past thirty years.

We cannot but admire a structure in which fitness or adaptability for the purpose of its erection is made the leading object to be attained; and we shall certainly be greatly disappointed if St. Luke's Church, when complete, does not fulfil the condition. The only feature of the external design that we are disposed to quarrel with is the "spire" portion, which crowns the campanile or tower; this, we understand, is to be the original spire, modified and reset, to meet the wishes, or rather to conciliate the conservative pre-

judices of the residents of the neighbourhood (both Catholic and Protestant), who from the force of habit and ignorance of art are so wedded to the old familiar form, and that willy-nilly it must go up again, notwithstanding that its presence (at no time good) will mar an otherwise perfect and complete design.

The building, when finished, will accommodate a congregation of about 900, and the cost will be about £6,000.

We hope, before long, to give an internal view of this building; and at the same time to enter into a more detailed description.

CIVIC LYRICS.—No. XLV.

NO ONE'S TO BLAME.

"Sing a Song of Sixpence."—*Nursery Rhyme.*

Sing a Song of Sixpence,
There's another spurt—
Five-and-forty Councillors
Fastly flinging dirt;
Fifteen solemn Aldermen,
Very much the same,
In this noble city,
Where no one's to blame!

Sing a Song of Sixpence,
Of noble's reduced—
Two able engineers
Perched upon their roof.
Great the drainage labour
To which they lay claim;
We're still in the gutter,
But no one's to blame!

Sing a Song of Sixpence,
A new jet of gas—
Six hungry lawyers
With bags full of brass.
No funds left for cleansing,
Or objects that claim
Man's noblest service,
As no one's to blame!

Sing a Song of Sixpence,
Bottle-full of smoke—
Big chimney ornament,
By Council bespoke.
When the job is finished
Start anew the game;
Dirt may kill the people,
But no one's to blame!

CIVIS.

THE "RESTORATION" OF CHRIST CHURCH CATHEDRAL.

WHEN will the Institute of Irish Architects next meet, or will they meet any more? The young Architectural Association will, we dare say, be soon showing signs of life again, and the sooner the better. Have any of the members of either body visited the works at the Cathedral lately? If not, we advise them to do so, and give the public the benefit of their opinions. We are very plain-spoken bodies who call a stick a stick, and a spade a spade, and a church a church, whether it is a new one or a repaired one. We go no farther, however, and we leave it to others to designate a re-building a "restoration." The reparation of Christ Church Cathedral was a noble thought, and if the structure was entirely re-modelled and re-built, it would still, as an ecclesiastical edifice (if well executed), be an ornament to our city. We have no doubt that, as a work of masonry and building construction, the workmanship and materials are worthy of commendation from a purely professional point of view; but we may, without meaning any offence, ask this question, "Will the works, when completed, at Christ Church, constitute a restoration or not?" Considerable progress is being made with the works at the Cathedral, and some progress is already observable in respect to the Synod Hall. Hereafter we will have an

opportunity of entering into a lengthened description of the work executed. Our object for the present is simply to elicit, not public opinion, *per se*, but professional architectural opinion. If there are any of our Institute or young associated architects with a few spare hours on hand, let them, by all means, visit the Cathedral singly or collectively, and on or before the date of their next architectural session, let us have a record of their impressions. We have had quite enough of mere newspaper opinion lately, and comical and mischievous enough it has been in architectural matters. *Ne sutor ultra crepidam* is a maxim that is too often forgotten in this city, and it might be remembered, in future, with considerable profit in office north and south of the Liffey.

TRADES PAGEANTS.

We have had quite a series of trades pageants and demonstrations lately, abroad and at home. A revival of these olden gariish displays would seem to be taking place. Last issue we gave some particulars respecting one that took place in Edinburgh; and in our present issue will be found some particulars of a remarkable one that took place at Bradford on the occasion of the opening of the Town Hall, and another at Flushing on the day the dock and harbour works were opened. Since our last issue a trades pageant, on a somewhat extensive scale, took place in this city, but the object was a purely political one, unlike altogether those which signalise works of public improvement.

A number of regular and irregular trades, and associated bodies of workmen, walked in Dublin on the 7th, with their banners and the other insignia of their orders. The banners of some were good, and the mottoes, when in relation to purely trade interests, were unobjectionable. On the other hand, strong political bias was too plainly observable in a variety of instances. We have, however, nothing to do in this journal with the political event or object. We regret that such displays are not confined to their proper province, and organised on occasions that would add dignity to the craftsman's calling. The pageants of Bradford and Flushing could be commended, and even the one at Edinburgh recorded in our last, for it was a protest against a trade grievance. In Dublin the case was far different: the trades were used for a purpose which could bring no benefit to them. Trades pageants have for centuries been associated with municipal ceremonials; but in this country, since the extinction of the old guilds of trade, and the advent of the "Reformed Corporation," all our trade demonstrations have been for political objects. O'Connell fiercely attacked the Dublin trades once, and stigmatised their combinations. He accused them of driving trade out of the country; yet, subsequently, he made peace with these bodies, and expressed his regret.

A trades demonstration was on several occasions organised during the Repeal movement, and particularly in the year of the "Monster meetings." In old corporate times in Dublin, when the triennial procession around the city and its liberties took place, and a new Lord Mayor was being inducted to office, the old trade guilds of Dublin used to walk in all their antique splendour. This pageant was called "Riding the Franchises." The annual procession that takes place in Dublin now when a new Lord Mayor comes in is a dingy affair indeed.

We like to see a trades pageant when organised and carried out in celebration of some noble object, by which the country or city is benefited, and art, trade, and manufacture improved.

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STAIRS — PALAZZO — SIENNA.

Photo-Lith. from Original Drawing



St. Luke's Church. DORK. ROAD ELEVATION.

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THE PEAT QUESTION.

OUR readers are aware that we have devoted a series of articles to a review of the peat question, and endeavoured, successfully we hope, to bring its merits to the front.

We described the system adopted for the utilization of peat on the Continent, and in these kingdoms; and in our last notice we directed particular attention to the improvements made in the manufacture of peat and peat charcoal by M. Challeton de Brughat, whose process for the conversion of raw peat into dense peat-coal, applicable for household and manufacturing wants, is about being worked by the Peat and Peat Charcoal Company (Limited) of London. Among the professional and other papers in England which have spoken in favour of the introduction of peat, and its utilization for several commercial wants, are the *Times*, *Standard*, the *City Press*, the *Mining World*, the *Shipping and Mercantile Gazette*, the *Railway News*, and the *Hour*. From the last-named we extract a notice which fully bears out our own views on the question, and will spare us the necessity of again entering at length on the subject:—

The result of the recent commissions, that on peat in the sister kingdom and that on the production and cost of coal in this, has led already to the establishment of works for the larger supply of peat-coal and charcoal for domestic and manufacturing wants in the United Kingdom. The works at present in operation in Ireland are not on a very large scale; but such as they are the demand for several months has exceeded the supply. Two of the most recently-established and efficiently-worked concerns owe their success to systematical efforts and management, in which English and Scotch capital is largely invested. The commencement of next year will witness the opening of very large and important works for the production of peat-coal without compression, the process adopted giving to the peat nearly the same density of pit coal. *Pari passu*, with the manufacture of improved peat will proceed that of charcoal. Nor is this all, for in the production of peat charcoal, the evolution of tar, oil, paraffin, sulphate of ammonia, methylated spirits, and other valuable products will be included. To manufacture and supply the market with cheap fuel, and in sufficient quantities, will be the first consideration, and as peat can be used for every purpose for which pit coal is utilised, and can be supplied at about half the price of Newcastle or best Wallsend, its advantages will be apparent. One of the objections hitherto urged against peat or preparations of peat for smelting purposes is the presence of phosphorus, but a new and important discovery, made by Professor Scheerer, of Freiburg, by which the phosphorus can be removed in the puddling process, will remove any further objection on that score. The works of peat-coal and charcoal which are to be commenced on the border of Wales in a few months' time will be conducted according to the process patented by M. Challeton de Brughat, who has been engaged at Montargis, in France, for the last quarter of a century on works of peat and charcoal production, and who has within the last three years made considerable improvements in the manufacture. The peat by the new and improved process contains little or no phosphorus; and as peat emits scarcely any smoke, produces a bright and clear fire without injuring flues or boilers, its importance must be admitted for manufactories, railways, ironworks, and general steam driving purposes. The value of charcoal without sulphur or phosphorus in the manufacture of steel, copper, bronze, and other metallic substances, as also for the manufacture of china and porcelain ware, are well known to those engaged in these arts. Therefore peat-charcoal, from its absence of phosphorus, must become doubly valuable, not alone for its qualities but its price. It is admitted by several that one ton of peat-charcoal is more than equal to double the quantity of the best wood charcoal; but were it even considerably less, the advantage would still be on its side in the processes alluded to. It is proposed to supply the market with peat-coal at from 12s. to 15s. per ton. If the cost of production, clear of all expenses at the works, does not range above 8s. per ton, there would certainly be a handsome profit to the producers or manufacturers. By working on an extensive scale it is possible that

the cost of production at the works could be reduced to between 6s. and 7s. per ton. In connection with the use of peat it may be stated here that the manager of the works of Sir A. Guinness, the eminent brewer in Dublin, gave testimony that two tons of ordinary turf (peat) were found to be mere economical in the furnace than one ton of coal. Comparing the present selling price of coal in London and Dublin, and remembering that coal at the pit's mouth ranges now from 18s. and upwards, it may safely be inferred that peat would find a ready market in a great many of our principal cities and towns, and that there would be a brisk demand for it at 14s. to 15s., and even more, per ton. There are several processes before the public for the production of dense peat by mechanical compression, but none of the appliances hitherto used have been successful. The appliances used, added to the modes adopted for artificial drying, considerably increased the cost of production. M. Challeton de Brughat's mechanical mode of treatment has given the best results known in the production of peat-coal and charcoal. From first to last there is no compression, and according to the method this manufacture of peat will be carried on extensively in the operations announced to be commenced shortly by the "Peat-Coal and Charcoal Company" (Limited) of London.

Of the advantages of a good supply of marketable fuel there can be little doubt. The high cost of coal is simply ruinous at present to the development of several industries; and as the production of iron is largely dependent on the supply and price of coal, it will be seen at once what a valuable acquisition to the community will be a constant supply of peat-coal. Independent of the many products which the manufacture of peat-coal will give rise to after a short period, it is worthy of consideration as a beginning the amount of employment it will beget in different parts of the country. Many hundreds of individuals will be kept at home in their own country, and be found in constant employment, who would probably otherwise have to emigrate.

The development of the peat or turf industry of Ireland would indeed be a great boon, for subordinated as that industry is at present to farm or agricultural labour, it can never be profitably worked. We wish the operations of the Peat and Peat Charcoal Company of London every success when started, and we do not care how soon they start the manufacture of the improved fuel and the other products in this country. There is plenty of room in Ireland for both foreign and native capitalists—and the more the merrier.

The development of our peat resources will undoubtedly develop our trades and manufactures; and on the other hand cheap fuel in England and Wales means cheap fuel in Ireland.

THE OPENING OF FLUSHING DOCKS HARBOUR.

THE opening of the new docks and harbour at Flushing in the Netherlands, on the 8th, was accompanied with a grand ceremonial. The king took a leading part in the ceremony; and besides his majesty's steam yacht, and a steamer which contained the dignitaries of Flushing and Middelburgh, another vessel accompanied the royal craft, namely, the *Lestris*, belonging to the Cork Steamship Company. To the latter the duty was assigned of representing Commerce. The new docks are completely finished. The basins are capable of receiving the largest ships, and every provision is made for modern wants in connection with the shipping. The dock and harbour works have been six years in course of construction, and are said to have cost two millions of pounds sterling.

A trades pageant formed part of the day's programme. There was a procession half a mile long, of triumphal cars drawn by gaily-decorated horses, and bearing not only symbols of the various handicrafts, but groups of

the workmen themselves, all hard at work in their different occupations. There were printers engaged in the various processes that, united, produce the book or the newspaper; blacksmiths vigorously hammering at their anvil; and shoemakers engaged in their sedentary and unpretentious craft. In short, nearly all the ordinary trades were thus illustrated by what may be called *tableaux vivants*; and symbolic representations were not wanting of the higher arts and the kindred sciences. Rain fell at intervals, but this dispiriting circumstance did not prevent the full accomplishment of the programme which had been laid down, and the King manfully performed the entire circuit of the town, everywhere followed by immense and enthusiastic crowds. There was a brilliant illumination of the streets and houses in the evening.

THE PROPOSED NEW STREET.

WE scarcely remember how many times during the last thirty years the question of the opening of a new thoroughfare from Dame-street to Christ Church-place has been before the Corporation. As often, however, as it has been brought up it has been shelved, the general excuse being the want of funds. The following letter, addressed to the Lord Mayor, was read at the last special meeting of the Corporation:—

"MY LORD,—We beg to transmit to your lordship a memorial signed by nearly 200 leading inhabitants and citizens, requesting the Town Council to take the necessary steps for forming a new and wide street from Dame-street to High-street, and to the great commercial district lying to the west of the City Hall. We are aware that the project has on several occasions been before the Corporation of Dublin, but the vast increase which has taken place (of late years) in the prosperity and commercial affairs of this part of the city require that an improvement which will remove the obstruction to traffic presented by the steep gradient and narrow width of Cork-hill, should be carried out as soon as possible, and facilities to trade by a convenient approach secured for this important part of Dublin. The present time is, in the opinion of the memorialists, a suitable period for pressing the matter on the attention of the Corporation, and we beg your lordship will take the earliest opportunity of laying the memorial before that body.—We have the honour to be your lordship's obedient servants,

"ARTHUR GUINNESS, SON AND CO.
"GEORGE ROE AND CO."

The memorial was signed by about 200 traders, and sets out in detail reasons in favour of the new street. There cannot be the least doubt but the opening of the new thoroughfare would be a great and decided improvement, and would add considerably to the effect of Christ Church Cathedral when the "restorations" are completed. Castle-street, though once a celebrated and thriving locality, is at present a rather tumble-down one. The demolition of one side of the old street would afford room for a continuous thoroughfare from the foot of Cork-hill to High-street, and opportunity would also be given for reducing the gradient of the hill, and converting what is at present a steep ascent into a gradual and easy one. We have no doubt but the Corporation expects that the Messrs. Roe and Guinness will contribute the funds to construct the new street, on the same principle as if it were a "restoration" they were subscribing to. We certainly do not expect the Corporation under existing circumstances to re-construct Castle-street, as they are unable to raise funds, not alone for the purpose, but for several other purposes more urgent still. There are no funds for main drainage, no funds for convalescent hospitals, no funds for cleansing the city, no funds for general sanitary purposes, no funds for anything in fact save for law and parliamentary expenses, and the payment of fat salaries for small services. It would be unconscionable on the part of a generous and forbearing public to expect that our paternal Corporation could construct the new street. Let there be another new loan at all events for preliminary expenses and — the lawyers.

ASPHALT: ITS NATURE AND USES.*

THERE are but few natural and artificial substances capable of taking the place of asphalt for footways. Its peculiar advantages are possessed by none, and in regard to cleanliness not a single substance equals it. It has, however, been replaced in some towns by various other substances, owing to the short-sighted economy of town commissions and architects, who have been persuaded by the representation of the manufacturers of artificial asphalt; the result showing that the material only lasted some ten years, while, if prepared from natural asphalt, it would have endured a century. The time has, however, arrived when such municipal councils should give more specific attention to the substance itself. A new epoch has arisen in the employment of asphalt in municipal public economy likely to lead to greater cleanliness both in the footways and carriage drives. The number of large towns has been greatly augmented by the influence of railways, and the traffic of these towns has greatly increased, the number of horses and carriages being not only absolutely, but relatively, more considerable in regard to population. The same cause has concentrated a greater amount of wealth in towns, and whole streets have started up where a handsome style of architecture has replaced the former kind of buildings, reared only for absolute need. Formerly Venice was the only city which displayed an uninterrupted magnificence in outline amongst private houses. At present city after city shows a gradual increase in the beauty of its streets, although perhaps not of so uniform a character.

THUS the requirements of society have transformed whole cities, or, at any rate, whole quarters of cities, from a loose agglomeration of separately built houses into a compact system of dwellings, connected closely by water, drain, and gas-pipes; nor is it perhaps too soon to expect that ere long fuel will be supplied in a similar manner. In such a complex system, our roadways may be considered to take part, standing in intimate connection with the houses, and protecting the subways in which lie embedded the pipes for other purposes. With the exception of a roof, there is nothing to distinguish our roadways from the general mass of building of which they thus form an integral part. Up to the present time, however, very little care has been bestowed upon the formation and maintenance of the carriage-ways; for while such important cities as Paris and London have long since been obliged to give great attention to the subject, custom has hitherto regarded road-making in smaller places as a matter of the most everyday prudence, much to the disadvantage of those places.

AT first, when cities lying in plains were at a great distance from quarries, the roadways were generally paved with stones taken from the beds of adjacent rivers, or belonging to the extensive glacial diluvium which covers the greater part of North Germany and many fertile tracts of other countries. But when it was resolved to replace these uneven lumps of such various size, recourse was had to the nearest quarries, and blocks of similar constituents, form, and shape were used to produce an uninterrupted roadway. The rule then was to select the largest blocks, and bury them deeply in the soil, thus securing greater uniformity and safety; but the result was, that every little inequality caused by the sinking of a large block at one corner produced a deep hole which struck the wheels, shaking the carriages, in turn breaking the edges and corners of the next paving-stones; and thus the large, strong, and expensive pavement, believed to possess such power of resistance, in a short time became as uneven as the former pavement of cobble stones.

THE more prudent the road commissioners were, the more clearly they demanded—as, for instance, in London—a uniform size of four-cornered stones of small dimensions.

THESe, as a rule, were found the most serviceable, and proved the best calculated to resist wear and tear. By these smaller stones the greater part of the noise of carriages was avoided, as well as many accidents to the horses common enough on the larger blocks. Still, the evil was not entirely overcome; and in order to get rid of it entirely, macadamised roads, previously found so valuable on country high roads, were introduced into towns. It is not necessary to describe here the miseries of dust in summer and mud in winter caused by this unhappy system. Hence we may really regard it as a new era in the public economy of towns that the railways, which brought about the necessity, also brought about the means of deliverance, by an increased facility in the transport of asphalt. In addition to this, the activity which has been created in this branch of labour, as we are about to show, may well be regarded as an epoch both new and brilliant in the industry of asphalt, so long partially forgotten and put aside. At present we shall present a brief history of the origin of that industry as perspicuously as possible.

IN order, however, to spare our readers several errors and prejudices, we shall first try to explain the nature of asphalt as distinctly as we can. The prejudices which have arisen against asphalt in reference to this new employment of it have chiefly been caused by the experience obtained in its use for footways. Where the latter have been made at no great distance from the sources of natural asphalt, we find no objections have occurred, as it is almost everlasting in its duration. But where it has been laid down at greater distances, i.e., where the natural substance has been enhanced in price by transport, it has been found almost entirely unavailable. The reason for this is very plain, for it is an acute judge who can distinguish natural asphalt from artificial mixtures of tar, pitch, and chalk, &c., and inexperienced persons do not even perceive the important difference in smell, and thus in very many places an inferior material is often laid down as asphalt. The name has especially been misused by technologists; as, for instance, in the case of paper roof tiles, which are generally only steeped in coal tar, and called asphalt tiles, and those pipes steeped in coal pitch—mere rolls of paper—are called asphalt pipes.

THE industry of asphalt proper only demands genuine materials and skilled artificers. In many places builders have been accustomed to use in the foundations of houses a mixture of tar, lime, and sand, made by an unskilled hand, and dignify it by the name of asphalt. With such a mixture the same builders, no doubt honestly deeming themselves acquainted with asphalt manufacture, covered casemates and bridge arches. Here, therefore, we find bad materials associated with ignorance on the part of the workman. That which was invisible remained buried with all its errors, but when these blunderers essayed to pave footways, the mistakes came to light; hence it is not surprising that the substance fell into great discredit, and, seldom, if ever, fulfilled the desired or expected conditions.

WE hope in this essay to destroy many of the prejudices existing on the subject. But we have besides another duty, that of encountering a series of errors hitherto found among classes of architects, and which have been disseminated by the writers and teachers on the art of building materials by careless and erroneous representations. In the books referred to, and which are received with respect on account of the authoritative names prefixed to them, the name of asphalt is almost always extended to these artificial blends, although the latter possess very distinct qualities, often entirely opposed to the real substance from an architectural point of view.

IT is easy to indicate the source of these errors. Only twenty years ago the then famous work of Accum on "Building Materials" contained no paragraphs respecting asphalt; and when the new name afterwards was adopted in architecture, the experts

naturally drew their chief knowledge on the subject from the mineralogical authorities.

MINeralogy, however, from the first, understood by asphalt something quite different from the acceptance adopted by technology—meaning only mineral pitch, or bitumen: therefore, when the characteristics and topography of this subject passed into technology, there was actually no real relation between the substance itself and those characteristics. Technology, again, understood by natural asphalt nothing else than porous limestone partially permeated by dense mineral pitch, capable of being worked up into a tough and hard mastic, while the pure mineral pitch, which is won by evaporation from earth-pitch, as a rule was only described as *goudron minéral* (Barbadoes pitch), and very seldom as asphalt. The mineralogists, therefore, heard with surprise of great reservoirs of asphalt, employed in technology, and thinking that by this substance, long known to them as asphalt, was meant mineral pitch, they tacked on to their accounts of native mineral pitch descriptions of such immense reservoirs, although as a rule scarcely a trace of the asphalt they described was to be found in them. Even Hausmann, of Göttingen, a most careful and attentive mineralogist, who was famed for his minute knowledge of all branches of technology, fell into this error, and thus this unfortunate misunderstanding was nourished by the most competent authorities in both branches of investigation. Authorities of the second rank and compilers, it may easily be understood, added to this confusion by not only using the word asphalt in both senses, but, what was still worse, using it in a promiscuous sense. Thus asphalt was under an evil star, as its properties and advantages as a building material—not to be found in individual instances or by chemical analysis, but not only by experience on a large scale—is only explained in fugitive circulars emanating from the owners of asphalt pits and asphalt factories, abounding in a certain partiality for the subject of the manufacture, and devoid of any strictly scientific sense.

HENCE we are unable to find in the manuals of mineralogy and geognosy, or those of lithurgy or technical chemistry, any sufficient information on the nature of asphalt, its dispersion or manufacture, nor do the manuals of practical architecture supply any information respecting the imitations made of it, or any right appreciation of this valuable natural building material; indeed, we do not know of any work in any of these branches of science deserving of commendation. We have before us at the present time two recent manuals of practical building, both extremely valuable, one by Bernhard Grüber, architect, and professor of architecture at Berlin; the other by Rudolph Gottgetreu, architect, and professor at the Polytechnic School at Munich. Of the three hundred pages of the former, and the six hundred and sixty-eight pages of the latter, we find respectively not quite three and seven pages concerning asphalt, and even in these there is far more about the artificial blends than the natural minerals, and the so-called mineral asphalt is called resin, and regarded as identical with asphalt itself. Thus it is easy to see how mistakes, occurring in the best authors, may readily be found among less competent writers. It is by this very confusion that we may understand the universal discredit into which asphalt has fallen. When every pitch and resin is rightly distinguished, when artificial blends are described as they really exist, and when asphalt mastic is understood to be melted, mineral bitumen and bituminous stones, then it will be possible to name and use each material in a proper way. We therefore coincide with the method of the distinguished Léon Malo, who prefixes to his essays on asphalt in the "Annales des Ponts et Chaussées," 1861, a classification of the respective natural substances.

BUT we are inclined to differ materially from him in regarding coal and bituminous slates as a portion of the group of asphalts, his arrangement having been wholly founded

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.

on chemical analysis, and the amount of carbon, hydrogen, and oxygen contained in them. Coal naturally belongs, together with asphalt, to the class of combustible substances, but it is by no means of a bituminous character, any more than the unfortunately named "bituminous wood" (ligneous brown coal), or the slates, only first really bituminous under distillation. Coal is the product of an immediate accretion of organic matter, which has to a certain extent conserved its outward and even inward structure. It forms, with brown coal and peat, both much more closely allied to it in properties and origin, a group of itself, and is specially distinguished by this very partial preservation of organic structure from those substances of a carbonaceous nature which have been formed from organic liquids. The circumstance that a part of coal—that used in the production of gas and coke—is susceptible of fusion, cannot be taken into consideration here, the conditions of origin being so distinct, especially as the so-called fusion of coal is not an actual fusion, but a process of segregation, as it is impossible entirely to re-fuse melted coke.

It is certainly not to be omitted that special kinds of coal from the recent secondary rocks, known as jet, which are manufactured in consequence of their want of structural form, resemble certain native mineral pitches, hardened to the greatest degree, to such an extent as to be almost indistinguishable. The instances in which there is any doubt whether mineral pitch or coal is present, can only seldom exist, and then the mode of stratification is decisive.

(To be continued.)

MILK, PUTRID SEWAGE, AND TYPHOID FEVER.

THE milk and sewage question for the last five or six weeks has undergone a threshing, which we hope will result in some public benefit. The letter of Mr. Alfred Smee, which started anew the controversy, instead of settling the question, rendered it more unsettled than ever. It would have been well had the writer more fully considered his thoughts before giving public expression to them in the dogmatic manner that characterizes their utterance. The following remarks, from a letter of P. H. Holland, M.R.C.S., Medical Inspector, somewhat squares with our own view of the matter:—

"Mr. Alfred Smee accuses the supporters of sewage irrigation (whom he calls irrigators) of reasoning 'as though logic was the art of wrong reasoning'; it is, therefore, fair to inquire if his own reasoning be exactly according to sound logic. As I understand him, he contends that typhoid fever is produced by drinking the milk of cows that have been fed on sewage grass, and that he bases this startling conclusion upon the fact that when his own cows were so fed the milk had an unpleasant taste, which disappeared when they eat other grass, and appeared again after they had again eaten sewage grass for a few days. Now, without assuming what is at least possible, some other unnoticed change in the cows or the dairy by which the change of milk was produced, and allowing what may be true, through unproved, that it was caused by the grass being either over-manured or actually wet with sewage, it is queer logic to take as proof that because milk is unpleasant to the taste it would therefore produce or convey typhoid fever, there not being the slightest evidence of such effect from eating rancid butter or drinking milk the albumen of which has undergone partial decomposition. Milk which apparently has conveyed such typhoid poison, probably by the careless admixture of sewage with it, or by the absorption by it of impurity from the air, is not sensibly altered to the taste. Mr. Smee's argument, therefore, comes to this, that because milk which is not sensibly altered has, in some rare instances, been the vehicle of disease, therefore other milk which is sensibly altered is the cause of such disease, though no such effect has ever been noticed to follow drinking milk which has undergone precisely the same apparent change. Again, those who dispute Mr. Smee's theory do not of course deny the possibility of typhoid fever being produced as he supposes; all they maintain is that there is nothing like proof that it ever is so produced, very strong negative proof that it is not, and that it is extremely improbable that it ever can be.

Mr. Smee's own case proves nothing more than that possibly the milk was injured in taste by the cause supposed; it is not even alleged that typhoid fever was produced by it. That it is not so produced is proved, as nearly as a negative can be proved, by the fact that sewage grass has been used very extensively, and for a very long time, to feed milch cows, without any such effect being observed; and it is contrary to analogy that a cow, herself in good health, can secrete milk containing typhoid poison; and, if possible, still more unlikely that injurious matter in the sewage should escape decomposition by filtering through soil irrigated with it, or by the vital changes in the grass nourished by it, or by the digestion and sanguification in the system of the cows, from whose blood the milk supposed to be poisoned is secreted. As Dr. Taylor, of Carlisle, states in the same copy of your paper, it is not before, but after the milk has issued from the body of the animal that the impurity is introduced, and it is then it should be guarded against. Of course the quality of a cow's milk is affected by her food, and it is very probably true, as is commonly believed, that excessive manuring of grassland injures the quality of the milk, probably by rendering it too rich in albumen, and thereby unusually liable to become putrid; but that it will render it a vehicle of disease, the cows themselves being unaffected, is a very different question. Grass land is usually manured by top dressing; manure often in a disgustingly offensive state is spread on the surface, remaining there until washed in by the rain or dew, when so washed in it is manure diluted. Sewage is simply diluted manure, and why the effect of one should differ much from the other "irrigators," I do not perceive. Perhaps Mr. Smee will kindly explain."

That impure milk will help to generate typhoid under favourable conditions, perhaps few will deny; but we are certain that on careful investigation two-thirds and more of the cases of typhoid recorded will be found to proceed from dirt and uncleanness. Foul air, and smells, impure water, adulterants and other foul matters, contribute their quota. It is after the milk comes from the cow the impurity begins, and not in the sewage grass the animal eats.

THE VICTORY MONUMENT AT BERLIN.

THIS somewhat remarkable monument, which was unveiled a few days since, has elicited a good deal of praise on one hand, and not a little adverse criticism also. As a work of art, it is imperfect as a whole, though possessing a good deal of beauty in parts. The monument consists of a fluted pillar of sandstone, surmounted by a colossal statue of Victory, and resting upon a broad pedestal of Swedish red granite, to which access is given by a circular flight of steps. The pillar itself is divided into three compartments, and in each compartment the flutings are, by a novel arrangement, made to serve as niches for twenty pieces of cannon placed lengthwise, one for every groove, the Danish pieces at the bottom, and the Austrian and French respectively in the two upper divisions. The cannons, the figure of Victory, and the balustrade of the gallery at the summit, are gilt and highly burnished. The capital of the column is formed by a row of eagles joined together by festoon work. Immediately above the pedestal stands a circular portico supported by sixteen granite columns, each sixteen feet high and three feet in diameter. Beneath this portico, and round the base of the pillar, are the allegorical cartoons executed by the historical painter, A. Von Werner, and in time to be replaced by the mosaic copies now in preparation at Venice under the direction of the world-famed Salvisti. On each of the four sides of the pedestal is a bas-relief of gilt bronze, 41 ft. in length, and 6½ ft. high, the materials employed in which have been furnished by other portions of the spoil taken in the three campaigns which the monument is designed to commemorate. No. 1, modelled by Calandrelli, and cast in the Royal Foundry at Berlin, is divided into two compartments, the first of which represents the preparations for the Danish campaign and the outward march of the troops, and the second the storming of the Duppel entrenchments. In the former division we see the

Prussian soldiers under arms, with flying colours and beating drums, while the old folks, the women, and the children are listening with heavy hearts to the consoling exhortations of the priests. The central group is formed by a young couple mutually plighting their troth and lingering over their sad farewell, for duty, in the shape of a hard-featured corporal, is summoning the young warrior with gesture of command to take his place in the ranks. The succeeding division presents a very spirited scene, and is, in my opinion, the gem of the whole. The Prussians are clambering like cats over the earthworks, and their foremost men are already engaged in a deadly hand-to-hand tussle with the Danes. All the horrors of war are before us in this eminently truthful group. In the realistic treatment there is no attempt to soften down the grim details of the struggle. Eyes are starting from their sockets in hatred and savage bloodthirst, fingers are clutching throats, muskets are wielded like clubs, and bayonet and revolver are doing terrible work among the maddened throng. The figures are carefully grouped, and the narrow limits within which the artist has chosen to work have enabled him to give us in each case a picture, instead of a mere series of episodes, as must be the result when one has to deal with 41 ft. of surface and no background to speak of.

The next bas-relief, executed by Moritz Schultz, and cast likewise in the Royal Foundry at Berlin, represents the meeting of the King and of the Crown Prince on the battle field of Königgrätz. Here there is a great variety of incident. A cavalry fight is going on at one end; at the other the wounded are being carried to the surgeon's tent; the ground is strewn with bodies, dismounted field pieces, and all the litter of "a glorious victory"—shakoos, knapsacks, the wrecks of shattered waggons, and musical instruments. An old riddled signpost, introduced with great art in one corner, points the way to "Königgrätz," and fixes the scene of action. The capitulation of Sedan, forming the subject of the next piece of sculpture, as we go round the pedestal from east to west, is the work of D. Kiel, and was cast in bronze at Gladenbeck's foundry in Berlin. King William and the Crown Prince are sitting their chargers side by side, and General Reilly, on foot, and cap in hand, is presenting to the former the letter of surrender just penned by the vanquished Emperor. The captured eagles are proudly held aloft by the exulting Prussian soldiers, and a few Frenchmen and Turcos, prisoners of war, are philosophically contemplating the scene with their hands in their trousers' pockets. Towards the right, the sculptor gives us a view of the Prussian troops passing under the Arc de Triomphe at Paris. A Parisian workman, in blouse and military kepi, though forced to get upon a heap of stones in order to make way for the conquering heroes of the day, keeps his short pipe firmly wedged between his teeth, and is evidently musing over the probabilities of a future *revanche*. The last work of the series is by Albert Wolff, and was cast by Eichwede in Hanover. It represents the triumphal entry of the troops into Berlin. The King, now Emperor of Germany, and the Crown Prince are, as usual, riding side by side. Behind them is the burly Chancellor, in the cuirassier's uniform, General Moltke, and a host of other portraits of distinguished officers. Bismarck, in fact, forms a conspicuous figure in all these bas-reliefs, with the single exception of the pair by Calandrelli relating to the Danish campaign, "*Aimez-vous Bismarck?*" a Frenchman would say, "*On en a mis partout.*" On the opposite side the chief civic dignitaries, accompanied by the clergy and by a bevy of maidens carrying garlands of flowers, are waiting to do the honours of the city to the returning warriors, who have just passed through the Brandenburg Gate. Soldiers are locked in the close embrace of wives and sweethearts; children are pressing forward, clamorous to be allowed to carry the muskets, &c. Over this work stands the inscription,

"*Das dankbare Vaterland dem siegretchen heere.*" (To the victorious army the grateful Fatherland.) The entrance to the monument is from the north side. A staircase of Silesian grey granite leads to the portico above mentioned, and thence a flight of 246 steps brings us to the summit. The entire height of the monument, from the level of the ground to the extremity of the standard borne in the right hand of the figure, is 194½ ft.

THE COST OF OUR FUTURE GAS SUPPLY.

COME all ye hoodwinked and heavily-burdened citizens, and hearken to this:—

"The following is the draft provisional order by the Board of Trade, under the powers of the Gas and Water Facilities Act, 1870, Amendment Act, 1873, to amend the Special Act, videlicet, The Dublin Alliance Gas Act, 1871, of the Dublin Alliance Consumers' Gas Company, in respect of the Illuminating Power and Price prescribed by that Act.

"The Dublin Alliance Consumers' Gas Company notwithstanding the provisions of their special acts, may, for a period of two years, from and after the 1st day of October next, reduce the present quality of gas from twenty candles' and sixteen candles' illuminating power, to one uniform quality of fourteen candles, and charge for the same five shillings and sixpence per 1,000 cubic feet. The Alliance and Dublin Gas Acts shall be throughout construed during the said period of two years as if gas of the quality of fourteen candles had been the quality prescribed by the said acts. And the said acts to that extent be held to have been amended and varied during the said period. Provided that during the supply of such lower quality gas, the company shall not divide more than at the rate of £5 per cent. per annum on the ordinary share capital."

Dear dirty Dublin! are you not sorry now for opposing the late paternal measure of the Corporation? Despite of your ingratitude, with a true parental feeling, the custodian and warder of your liberties is nobly coming forward again to help you in your extremity. To be sure there are Pontius Pilates and Judas Iscariots in modern days as well as of erst, but what of that? The Corporation profess to desire an opportunity of fighting your cause with the traitorous Gas Company, and though some hanging-on law advisers may be urging them on, it becomes you to have faith in their professions—yes, as far as you can throw them, but no further.

The citizens, independent of the Corporation, are certainly called upon to act in view of the powers sought by the Gas Company to increase the price of gas. Knowing well the policy of the inner circle of the Town Council, we certainly would not advise our citizens to place any reliance upon the professions of the Corporation. Public money, shamefully squandered in litigation, is only too likely to be the result of any action instituted on the part of the Corporation under its present representation. Another attempt will, we understand, soon be made in the interest of the civic body to carry out their original design in respect to the management and control of the gas supply. Hints have already been thrown out, and "feelers" are in circulation, and it is worth while to watch the progress of the "new move" for transferring the management of the gas supply to a joint council composed of members of the Corporation and "independent citizens." By all means let the citizens bide their time. Let the new board of Gas Directors try their prentice hands for a year or two, and if they fail, we will be prepared to tell them and the public what we think of them and a corporate transfer.

SANITARY AND OTHER NOTES.

DUBLIN.—Since our last issue, fifty-four cases were heard by the police magistrates in the one day for breaches of the sanitary acts. The offences consisted chiefly for having heaps of manure in back-yards; pigs, goats, horses, asses, and poultry underneath dwellings or closely adjoining them; houses and rooms in a filthy state; want of proper closet and ash-pit accommodation, and also for dis-

obedience to former orders to abate nuisances complained of. In respect to drainage, sewerage, removal of nuisances, and to water supply, if the corporate authorities fully performed their duties, there would be no commiseration felt for the parties who neglect to keep their habitations in a proper state of cleanliness. Prosecute habitual offenders, by all means, but supplement the efforts of the poor who really desire to act up to the letter of the law. This the Corporation of our city have never done. At present they set a bad example to the poor, and they prosecute them for taking pattern. Were these fifty-four persons who were prosecuted, north and south of the Liffey, adulterators, vendors of unsound food and impure drinks, dealers in light weights and measures, we would not hesitate to re-publish the whole of their names. Some of them are certainly flagrant offenders against public decency and health, but others need that the authorities should aid them in their efforts. The landlords are constantly to blame in several instances for the defective drainage, but then it is well known our city is without any proper system of sewerage, and it is likely to remain so, we fear, for some years to come, because we have an utterly negligent and incompetent Corporation.

At a meeting of the Sanitary Association, the Inspection Sub-Committee brought up their report from which the following is an extract:—"Grange-gorman Corporation Depot.—The effluvia arising from the depot is most offensive, and is greatly complained of by the inhabitants of the neighbourhood. 55 Bishop-street, occupied by five families, one of whom, seven in number, has had amongst its members five cases of fever since February last. There is a large quantity of refuse and manure piled up in the back yard, and the ash-pit, &c., are in a most abominable state. It is stated that the yard has been cleaned out only once within the last two years. The house is in a most dangerous state as regards the health of its inmates.

In the South Dublin Union, in reference to the proposed cholera hospital, Mr. John Byrne, F.C., said that the guardians of this union were the proper nuisance authorities for taking action in the matter in the city. He had been in communication with Messrs. Bewley, Webb and Co., of the North Wall, as to the feasibility of constructing, at a small cost, a suitable floating, flat-bottomed structure on the spot; and he held in his hand now their specification to erect such a floating hospital, able to accommodate sixteen patients, and giving a space of 40 ft. by 20 ft. and 10 ft. high, at a cost of £975. This would be very cheap, and would, he trusted, be found adequate to any emergency likely to arise; and he, therefore, proposed the adoption of Messrs. Bewley's estimate. The washing, &c., in connection with this form of hospital would be performed on deck, and thus be more conducive to sanitary results. The motion was unanimously adopted, the contract to be completed before the 6th of November, to the satisfaction of this board.

BRAY.—At a meeting of the Commissioners, the subject of the encroachment by local traders on the flagway in the main street of Bray came under discussion, and it was resolved that legal advice should be taken. The testimonials of a number of candidates for the vacant post of township inspector, at a salary of £40 per annum, were examined, and on a ballot, Mr. R. Geoghagan, late of the Constabulary, was declared elected, the office to be held only during the efficient performance of its duties. The state of the board's accounts and finances was next examined. It having been found that a large amount of rates remained uncollected, the collector was directed to be more energetic in his collection. The contractor for the new Bray-bridge and Commons-road was ordered to be paid £100 on account of the works, the surveyor stating that two-thirds had been completed. Mr. Cuthbert, a commissioner, introduced the plans of a lime kiln proposed to be erected by him on the southern bank of Bray river, close to the bridge, the courthouse, and other buildings, on a piece of ground recently the subject of litigation between himself and the Earl of Meath. Mr. Breslin strongly opposed the proposed erection as likely to prove injurious to health and unsightly. Mr. O'Neill stated that disagreeable exhalations emanated from such works. Mr. Cuthbert and Mr. Sothen denied this, and stated that a public service would be rendered in making lime for the district. After a warm discussion, in which the chairman took no part, the plans were ordered to lie on the table till the surveyor had made an official report on the subject, and until one of the Dublin analysts should have been consulted as to the effect of works of this description on public health.

WICKLOW.—At a meeting of the commissioners, the question of the water supply was taken into consideration. Mr. Henry MacPhail, chairman, read the following communication from Mr. Andrews, C.E.:—"It is my opinion that the scheme

sketched out by the minute of Commissioners is not adequate to the wants of the town. The extent of any scheme for an effectual supply should provide for the requirements of a population of 4,000, and should be capable of being easily extended to supply more when necessary. About 80,000 gallons per day is, therefore, requisite to give a sufficiency to put the inhabitants in a position equal to that of other towns. The works for such a scheme may be constructed gradually, but any money now expended should be for the construction of a part of the whole. I cannot venture into further details until I have completed surveys, levels, and other observations, which will be made by a competent person acting under my directions; but I shall report as soon as he finishes what I consider should be done. Whether as regards that proposed by the Commissioners' minute or another scheme with adaptability to future extension, I shall in either case keep in view the opinion expressed by several Commissioners, viz.—to make the first outlay as small as possible consistent with economy and efficiency." Mr. Hayden proposed "that a memorial be prepared and forwarded to the Lords of the Treasury for their sanction to borrow £2,000 to supply the town with water." Mr. Edwards seconded the resolution. Mr. Oakes proposed as an amendment, "that no application be made to the Treasury until the report of Mr. Andrews be received." On a division the amendment was carried by a majority of one.

DROGHEDA.—In respect to funds for carrying out sanitary improvements, Drogheda seems to labour under the same sing-song complaint as our model-ruled city. The sewerage question is now, and has been for a considerable time, before the Town Council, but it makes very little advance. The borough surveyor in his letter to the Town Council gives the following reasons why the sewerage of the town is defective:—"1st. The existing sewers of the town are not constructed on the rules now laid down by Sanitary Science—all having flat floors, generally paved with pebble paving, and in some of the small sewers no paved floors at all. The side walls are vertical, the masonry of which is generally of an inferior description, and covered with Tullyescar flags laid dry, except in a few instances where they are covered with a brick arch. 2nd. In that part of the town where sewers exist, they are on a higher level than the basement stories of the houses, and consequently the necessary appliances for domestic comfort cannot under all circumstances be availed of by the inhabitants. 3rd. In a large and thickly populated portion of the town, mostly inhabited by the poorer classes, there are no sewers at all, and, with the view of enabling you to understand me clearly on this point, where sewers exist I have marked them on an ordnance sheet, which I beg to enclose herewith." He further adds in respect to some premises in Shop-street, that no system of sewers can be constructed to relieve the premises, as they are below the level of the river at spring tides. In conclusion he says he has ready a plan for the improvement of the sewerage of Drogheda, by which some of the existing sewers for the present can be made available, and at some future period the sewerage utilized—all which he feels will tend to benefit permanently the health of the inhabitants. *In re* the sewerage of Drogheda, the local *Conservatee* says:—"We suppose the Corporation is deemed by its members to be a responsible body! If so, what a detrimental thing responsibility must be! It cannot, however, be denied that the County as compared with the Corporation, possesses a vastly superior machinery for carrying out important works, and that, unlike the Borough Surveyor has the power, by refusing to certify, of compelling contractors to fulfil their obligations. Mr. Downes says that if the Corporation are forced to construct the sewers, of course they must do so, but then the people will see they are driven to it, and will not grumble at paying the rate. We are not so sure that the people will not grumble; but without doubt they will perceive that the Corporation have been 'forced' and 'driven,' or that body never yet attempted anything useful except on compulsion. In the event of the Local Government Board obliging the Corporation to act in the matter, the only practicable course open to them will be that suggested by Mr. Daly." The Local Government Board has appointed the Board of Guardians the nuisance authority for the port of Drogheda.

NEWRY.—The Commissioners, through their officers, have since our last been summoning parties for obstructing the thoroughfares, and seem determined to put these nuisances down, so often complained of both in this city as well as in the northern towns.

There is a sad lack of sanitary vigilance and efficiency observable still in the majority of towns throughout this country.

SOCIETY OF ARTS PRIZES—THE CORK SCHOOL.

In the early part of the present year the council of the Society of Arts (London), decided upon holding examinations in various parts of the kingdom upon the subjects of Cotton, Paper, Steel, and Silk manufactures and Carriage Building. Those for the southern district were held in the School of Art, Cork, in the month of May last. From the report just issued by the Council of the Society of Arts, we learn that Mr. Thomas F. Mullins, of 42 Maylor-street in that city, has been awarded a first prize of £5, a first-class certificate in carriage building, and the studentship of £50, given by Her Majesty's Commissioners. His brother, Mr. Matthew Mullins, has obtained the second prize of £3 offered by G. N. Hooper, Esq., Worshipful Master of the Guild of Coachmakers, London, and a third-class certificate in carriage building. We are informed that the Messrs. Mullins have for some time past been attentive, hard-working students at the Cork School of Art and Science, so ably presided over by Mr. J. Brennan, head master.

We may here add that in Steel Manufacture Mr. W. H. Warren, 2 Upper Cross-road, Kingsland Park, Dublin, engineer, has obtained a first-class certificate, in Steel Manufacture, a prize of £10, and a studentship of £50.

CURRENT LITERATURE.

THE MAGAZINES.

Tinsley for this month has several papers and stories of a light and agreeable character. Among the noticeable are: "Beautiful Names," "Modern Pharisees," "Flowers from many Anthologies." There is also a paper on "The Turner Drawings at South Kensington," worthy of particular notice, as it mentions the fact of many of that great painter's sketches being still lying *perdu* at the National Gallery.

Belgravia is a very good number indeed. Mr. Sala is at his post again, and Miss Bradon rattles on towards the completion of her interesting novel of "Strangers and Pilgrims." "A Glimpse at Gretna Green," and "Our George and the Sultan," are highly interesting sketches.

London Society.—The story of Mr. Chas. Read comes to an end; and notwithstanding the acknowledged ability of the writer, the readers of the magazine will not regret the conclusion. The editor's story proceeds apace—amusing, but improbable. George Cruikshank, jun., a nephew of the veteran artist of the same name, furnishes a batch of sketches, entitled "The Folly of Pleasure." They are very good, and show a decided improvement in the young artist's efforts. The several articles are on the whole commendable.

Macmillan.—The labour question comes in for discussion in a capital article by Canon Girdlestone, dealing with the Agricultural labourer and the Labourer's Union. An article by Miss Sewell on "Anglican Deaconesses," and another on "Needlework," are thoughtful and well written.

St. Paul's has a curious article on "Chiro-mancy" by Mr. Eulule Evans, and one on "Music in England." The latter, though it produces nothing new, is withal a good review of the musical strength of the metropolis of England. The following articles are also readable: "The Owl's Nest in the City," "Memoirs of a Cynic," and "Finding the Way at Sea."

The Gentleman's.—The two serial stories in this magazine proceed well, but we have already spoken of one of them. Mr. Walford contributes a very interesting paper on "Northumberland House," which will soon pass away to make room for "improvements." "Northumberland House" has also been written to death for years. Its history and associations afford pleasant gossip, and is of antiquarian interest.

Temple Bar for this month is an excellent number. The article on "Dibdin" and

"Bret Harte" are really interesting and enjoyable. "The Wooing O't" is drawing towards its end, it is hoped to the satisfaction of its admirers.

Cornhill is an advance in merit on the last. There are quite a number of good papers. The story, "Belda's Fortune," moves on well. "Young Brown" is also an attractive story. The papers on "Co-operative Stores" and the one on "Physical Education" are excellent contributions.

St. James's.—The serial story of "Dorothy's Charge" is apparently nearing to its completion. Miss Alcott's pleasant story, "Work, or Christie's Experiment," proceeds steadily. The paper entitled "Mr. Shindy's Adventures in Search of Liberty" possesses a good deal of humour mixed with good sense.

The Fortnightly Review.—The education question comes in for a good discussion in this number on the part of the editor. "The Liberal Party and its Leaders" is dealt with by Mr. Chamberlain lively and severe. General Cluseret concludes his papers on the "Military Side of the Commune." "The Perception of Musical Form" is a well-written contribution by Mr. Sully. The other papers are of average merit. We have not space in this issue for fuller reviews, or further notices of other publications.

A STATUE IN CONCRETE.

The uses to which concrete may be put are yet unknown, but day by day the value of the material is being more fully proved. On Tuesday last, at Plas Llanfair, the marine seat of Admiral Lord Clarence Paget, a colossal statue of Nelson, which his lordship had just completed, was unveiled by Lord Cowley. The statue, which is 19 feet high, and weighs over 12 tons, is intended to answer the double purpose of perpetuating the memory of the greatest of our naval heroes and serving as a landmark to mariners navigating the highly dangerous Swilly Channel. To carry out this latter object a square tower, 18 feet high, has been built on a rocky promontory commanding an extensive view up and down the Menai Straits. This tower has been surmounted by a pedestal 10 feet high, on which the statue is placed. The total height from the ground is thus 42 feet. The statue is of limestone and Portland cement. One of the objects, says a newspaper critic, Lord Clarence has had in view has been to show that our public parks can be decorated with statues little inferior to marble in appearance, and probably more durable, at a tenth of the cost of marble statues.

SESKINORE CHURCH, CO. TYRONE.

The new church at Seskinore, County Tyrone, has been consecrated by the Lord Primate. It is erected on the estate of Major G. P. McClinton. The building is in the early Gothic style, and, while the ornamentation is not profuse, the different features have been so dealt with that the general effect is singularly neat and pleasing. The church is built of the black stone of the neighbourhood, with quoins and dressings of Dungannon freestone. The sittings are of pine, stained and varnished, and the roof is sheeted between the rafters with stained and varnished sheeting. The chancel window is filled with an exceedingly pretty design, the subject of which was suggested by Mrs. McClinton, in commemoration of a very painful family bereavement. On a brass plate, below the window, is the following inscription:—"This window is erected in memory of our darling boy, Beresford George Perry McClinton, by his fond mother, grandmother (Dora McClinton), and nurse. The Lord gave him 15th February, 1861, and took him 31st January, 1870." In the centre of the window is the text, "Is it well with the child? It is well." The plans were prepared by Mr. Robert A. Ferguson, of the firm of Messrs. G. and R. Ferguson, Londonderry, builders, by whom the work was executed.

THE LEITRIM COLLIERIES.

THESE collieries, situated on the mountain of Seltonaskeagh, at a distance of about 1½ miles from the shores of Lough Allen, are being worked by a company under the title of Henry Fawcett and Co. (Limited). There are two seams of coal, one 18 to 20 in., the other 24 to 30 in. The quantity of coal now being put out is about 20 tons daily, which will be increased to about 50 tons on the top seam being brought into full operation. The prices of the coal at present loaded into boats at Spencer-quay, are, for best picked and screened coal for house purposes, 16s. per ton; for same, but with largest lumps removed (excellently adapted for steam purposes), 12s. per ton; for screenings and small coal (excellent for smith's use, lime burning, &c.), 9s. per ton. The coal is excellent house coal, free from sulphur, and highly bituminous, though not quite so quick in burning, and with rather more ash than the best English coal. There is no doubt, that if the quality be maintained and the prices kept to the present standard, the coal must soon find a very general market.

HOME AND FOREIGN NOTES.

A new monument (to replace the original one, which had been broken), has been placed over the grave of Wolfe Tone, in Bodensstown Churchyard, Co. Kildare. It consists of a slab of black stone, with a suitable inscription.

IRISH COAL.—We understand that a depot for Irish coal from the Arigna coal mines has been opened in Sligo. The quality of the coal is said to be superior to any yet obtained from the district, and it can be sold at a price considerably less than even Scotch coal. The company have made arrangements with the Midland Railway for the carriage of the coal on favourable terms.

A NEW SQUARE IN PARIS.—A new square has just been opened in Paris, near the Rue de Sèvres, and named the "Square des Petite-Pères." It has been laid out with the object of affording a cool and shady place of resort in summer. It should not be forgotten that this, like all other squares in Paris, and unlike any of our London [or Dublin] squares, is open, in the most unrestricted manner, to all classes of the public.—*The Garden*.

SCIENCE AND ART.—The following candidates have obtained Royal Exhibitions of £50 per annum each for three years, and free admission to the course of instruction:—To the Royal School of Mines, Jermyn-street, London—William Hewitt, 21, teacher, Kennington; C. S. Fleming, 20, assistant teacher, Islington; and Samuel Barratt, 22, assistant teacher, Stockport. To the Royal College of Science, Dublin—Henry Louis, 17, student, Anerley; Robert H. Reilly, 18, student, Roscrea; and Thomas Arnall, 22, rule maker, Birmingham.

An American is said to have brought into use a new motive power that promises to revolutionise existing modes of propulsion. The inventor substitutes the vapours of bisulphide of carbon for steam, the vapours being condensed and used over again with very little loss of the chemical. The vapours are produced in a water bath, which at boiling point creates a pressure of 65 lbs. to the inch, at least so says the *Boston Globe*.

A PAINTING CONTRACT.—In response to advertisements asking for tenders for painting Naas Union Workhouse, there were three sent in. One of the parties having questioned the validity of the one accepted, the guardians have submitted the matter to the Local Government Board:—"On the 27th August last there were three tenders sent in for painting the workhouse—namely, from Messrs. Dunne, of Naas; Jobson, of Abbeyleix; and McCarthy, of Newcastle, County Limerick, all of which were considered too high, but they were directed to send in an amended tender, leaving out the painting of the building in which the board-room and clerk's office are, by the following board day, and accordingly they did so. Mr. Dunne put in for £110, Mr. Jobson and Mr. McCarthy for £100 each, the latter on the condition that the inside of the gutters be not painted. The board allowed Mr. Dunne to amend his tender by taking £5 off, and they gave him the contract."

TYPHOID FEVER AND THE DUST CONTRACTORS.—It is calculated, says the *Pall Mall Gazette*, that since the death of the late Prince Consort, no fewer than 500,000 persons in this

country have been killed by typhoid fever, one-half of whom might at this moment have been alive had sanitary reform been taken up as a policy, and the public health been included amongst the "great questions" of the day. It is evident that matters cannot long go on as at present without heavy punishment. The condition of affairs is becoming almost unbearable. The people cannot, even in the height of summer, get their dust-bins emptied, owing to the mysterious connection between the dust contractors and the vestries. The drains of their houses are rarely well ordered. They are stunted in water, stunted in air, poisoned and robbed in their food, and in the meantime typhoid fever crawls into their homes by countless channels. No wonder there is so much popular contempt for "great political problems."

SCHOOLS OF ART IN FRANCE.—The organization of the French Schools of Arts and Manufactures, regulated at different times by decrees and ministerial decisions, was modified and completed by an Imperial order of the 30th of December, 1865:—Each establishment may receive 300 pupils at most. The terms, including board, are 600*fr.* a year, and the charge for the outfit 250*fr.* Wholly or partially free admissions are granted, within the limits of the credit opened in the budget, to such pupils as have proved that their families have not the means to keep them at the school, and who shall have passed the competitive examinations which take place every year for that object. Those institutions are three in number: at Chalons, created by the decree of 6 Ventose, An. XI.; at Angers, dating from 1801; and that of Aix, founded by a law of June, 13th, 1843. The number of pupils in the three establishments at the commencement of the present year was respectively 254, 278, and 248; being in all 780. The receipts entered in the budget of 1874 are 286,950*fr.* for board and outfits, and 62,000*fr.* for the sale of objects manufactured in the schools. The cost of the three schools is estimated at 1,097,000*fr.*, or 748,050*fr.* more than the receipts.

THE TOMB OF JOSHUA.—M. Guerin, who has been engaged for the French Government in scientific researches in Palestine, has recently read a paper in a geographical congress at Lyons, describing his discovery of the tomb of Joshua, the son of Nun. The tomb, he states, is situated at Tigné, which he considers to be the ancient Timnath Serah, the heritage of Joshua. In the hill at this place are many tombs, and this one has a vestibule, into which the light of day penetrates, supported by two columns, while the place is furnished with nearly 300 niches for lamps, and is soiled evidently from their use. This argues that some periodical celebrations were held there. This vestibule gives entrance to two chambers, one containing fifteen receptacles for coffins, and the other but one. In this latter one M. Guerin supposes the body of Joshua to have been deposited, and he thinks he has discovered strong evidence of this in the statement that the sharp flint knives with which Joshua used to circumcise the children of Israel at Gilgal were buried in his tomb. On removing the *débris* which covered the floor of the tomb, a large number of flint knives were found, and on making some excavations at Gilgal, the passage of the Jordan, a number of similar knives were also discovered. The pillars in the vestibule of the tomb are surrounded by a fillet in the style of Egyptian monuments, and this would argue a period of about the time of Joshua. M. Guerin also believes he has found the tomb of the Maccabees at Medieh, which he thinks corresponds with the modin of the Book of Maccabees.

A DISTINGUISHED MEDALLIST.—The late Mr. Joseph S. Wyon, whose death at the early age of 37 was recently announced, held the appointment of chief engraver of her Majesty's seals. This office had been previously held by his father, Mr. Benjamin Wyon, and by his grandfather, Mr. Thomas Wyon, upon whom it was first conferred in the year 1816. The lately deceased artist was educated by his father, Mr. Benjamin Wyon, and in the Royal Academy of Arts, where he obtained two silver medals. The first work of importance was a medal of James Watt, the inventor of the steam engine. This medal so pleased the late Robert Stephenson that, at his recommendation, it was adopted as an annual prize medal by the Royal Institute of Civil Engineers. The first work by the late Mr. J. S. Wyon, executed in his capacity as chief engraver of her Majesty's seals, was the Great Seal of England at present in use. In the year 1863 he executed a medal, struck by order of the Corporation of the City of London, to commemorate the passage of the Princess Alexandra through the City, previous to her marriage with the Prince of Wales, and in the year 1867 a medal for the same corporation to commemorate the reception of the Sultan. In the latter year he executed the medal struck by the order of the Canadian government to

commemorate the Confederation of the Four Provinces of the Dominion of Canada. The great seal of the Dominion of Canada, a beautiful work of art, was also executed by him at the same time. The above-mentioned are but a few of the most important of the late artist's works, which also comprise medals of various members of the Royal family, and which are well and widely known. The late Mr. J. S. Wyon was a junior in the London Exhibition of 1862, and in conjunction with his brother, Mr. A. B. Wyon, received the only medal awarded in the Paris Exhibition of 1867 to British Exhibitors in the class of sculpture. The two brothers have also recently been awarded two medals in the exhibition of Vienna. Mr. J. S. Wyon was also decorated by the Sultan of Turkey with the order of the Medjidie.

CORRESPONDENCE.

ARCHITECT AND ENGINEER.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I quite agree with the spirit and scope of your article of the 15th ult., and I am fully of the opinion that an amalgamation of both professions would be conducive to the public interest and the practice of both professions. That a limit must be reached at no very distant period to the remunerative practice of engineers as a single body in the three kingdoms, I think it is not only possible but highly probable. Few of us whose early education, training, and associations have been connected with our native country feel desirous of leaving it for foreign practice, if remunerative and respectable practice can be had at home. The supply of both architects and engineers in Great Britain at present is beyond the demand, and a small number indeed rise to elevated positions. The same training is applicable to both, and the aspirant who is desirous of becoming a perfect architect can also become an efficient engineer. As of old, I think the combination of the architect and engineer is highly desirable, and I have little doubt but that it will eventually take place in the United Kingdom. Hoping that some other of your professional correspondents who have more time to spare than myself will take up the further discussion of your important suggestions, I am yours, &c.,

AN ARCHITECT AND ENGINEER.

ODOURS BY RAIL AND RIVER.

In a letter to one of our daily contemporaries, Viscount Southwell, besides directing attention to the exorbitant charges for travelling on some of our railway lines, also directs attention to the unclean condition of the carriages. We have ourselves noticed the matter long since. His lordship says:—

"The farmer is perplexed how to send his cattle, the merchant to send his goods, so as to leave a little profit to him; but the powers that be won't agree to an one practical plan to increase their dividends and assist the farmer and merchant. The Dublin and Belfast lines are far ahead of their contemporaries. The Limerick and Waterford and the Limerick and Foynes lock up their doors on Sunday, and prohibit travelling. The Limerick and Foynes charge 17*s.* for one pig truck, and only 13*s.* 6*d.* for a cattle truck, because pigs, I suppose, are more difficult to drive. Why not send them dead, as the Dublin and Drogheda proposed, to England. Trains on the Midland leaving Galway at four p.m. and not getting in till half-past eleven p.m. The Limerick and Foynes charge the Rathkeale Gas Company for seven miles from Foynes, 3*s.* 9*d.* a ton for coals, and the company have to cart it. I have no doubt numerous examples of the excessive prices the companies charge could be adduced, and I should like to know how many of the companies observe the Act of Parliament with regard to one penny per mile for third class passengers, and the return ticket over fifty miles lasting till the next day, or over one hundred till the day after. I say nothing about the cleanliness of the carriages, for on most of them passengers can judge for themselves as to the amount of dust developed when travelling on most of the Irish lines. There is an additional *agrement* to the tourist travelling in Ireland passing through Dublin—viz., the agreeable odour developed by the mud-banks and sewers of the Liffey, which the Corporation might easily abate at a trifling cost, not to speak of the serious risk to life and health of the population of Dublin."

Our readers need hardly be informed of the strength of the perfume that rises from the Liffey's bed, which has so many years occupied the deep consideration of such penetrating intellects as Messrs. Bazelgette and Neville, and which we are certain will be purified some time before or after the Greek kalends.

As for the railway carriages on some of our Irish lines, we have a lively recollection of their dingy and disgusting state. A travelling sanitary inspector would be a meet appointment on the part of the Local Government Board.

TO CORRESPONDENTS.

"UNKNOWN DUBLIN."—The sketch intended for this issue is unavoidably held over. In reply to enquiries, the author desires us to say that they will be published hereafter in a volume, with numerous additions and corrections; and that the several names and incidents, that had to be thinly disguised will be made clear. He hopes that, when the date of publication arrives, a public-spirited publisher will be found in his native and Unknown City.

AN OLD CITIZEN.—Part of your queries are answered in the above notice. The author of the sketches would, we have no doubt, be thankful for the notes mentioned. Any old walls and strays and items of interest connected with the past history of our streets, and the notabilities and public characters that lived, moved, and had their being therein would be acceptable, and suitably acknowledged, no matter by whom sent—wealthy or humble.

SANITARY INSPECTOR.—We are happy to hear our remarks had some effect. Your masters, however, will move little unless driven. We shall see next what the Local Government Board can do.

R.H.A.—Really we must say you are a little unconscionable. A puff is a puff, and an advertisement an advertisement. Those who have anything to sell or make known for their own benefit should choose the usual mode for doing so.

A COACHMAKER.—Mr. Thomas F. Mullins, who received the £50 prize and studentship of the Society of Arts in the examination in carriage building, and his brother Mr. M. Mullins, who gained the second prize, are both natives of Cork, and were diligent pupils at the evening classes of the Cork School of Art. We hope the trade and the school in Dublin will turn out similar pupils, who will pass successfully through their technological examination.

TRADE BANNERS.—There is great room for improvement in the design and execution of the emblematic banners of the trades of Dublin. Some of them are gaudy enough; but, though paint is plentiful everywhere, art is nowhere. It strikes us also that the presidents and secretaries of the various trades are oblivious in many cases of the true emblems of their craft, or of the date of their ancient charters.

S. S. (Guildhall Library, London).—Will be sent. Thanks.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or milk. Each packet is labelled—"JAMES EPPS & CO., Homoeopathic Chemists, London."

MANUFACTURE OF COCOA.—"We will now give an account of the process adopted by Messrs. James Epps and Co., manufacturers of dietetic articles, at their works in the Euston-road, London."—*Cassell's Household Guide*.

THE PATENT GLASS CUTTER.—Of the many inventions of modern days, one of the most useful and surprising is a substitute for the glaziers' diamond, which can be used effectually by the most inexperienced. In shape it resembles the ordinary glaziers' diamond, but instead of diamond, a small circular piece of hardened steel, which revolves like a wheel when passing over the glass, is substituted, and we can testify that it accomplishes its work with astonishing rapidity, and cuts thick or thin glass with equal ease. This little novelty, introduced to Ireland by the eminent firm of Messrs. Dockrell, Sons, and Co., of George's street, Dublin, will be found invaluable to the amateur artisan and horticulturist, and is placed within the reach of all by its moderate price—only 5*s.* 6*d.* each, post free.

NOTICE.

Post Office Orders and Cheques should be made payable to Mr. PETER ROE, 42, Mabbott-street, Dublin.

We shall be glad to receive from any of our readers notes of works in contemplation or in progress.

RATES OF SUBSCRIPTION TO IRISH BUILDER.

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It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

The Irish Builder.

VOL. XIV.—No. 331.

Our Learned Bodies—What are they Doing?

PRELIMINARY.



OUR readers will not consider it necessary that we should furnish them with a list of the literary, scientific, art, or other societies of Dublin which claim to be

representative as well as existing. That useful index of names and places and other matters called "Thom's" will afford the catalogue. A stranger to our city, on consulting that volume, must be agreeably impressed with the names and numbers of our learned bodies, and will naturally come to the conclusion that there is a great amount of literary, artistic, and scientific activity present in our midst.

Passing over the names of latter-day societies or institutions, there are two or three at least entitled, from their age and former services, to be considered really representative—but the question arises are they really so? Age is, no doubt, according to the old maxim, honourable; but in these days old age is often associated with incapacity, and the once great statesman and judge is perforce obliged to yield place to clearer intellects and to younger blood. Societies, however, unlike individual members thereof, may still grow aged, and according as they advance in years grow more useful.

We have in this city a Royal Irish Academy in existence since 1785-6; we have a Royal Dublin Society incorporated nearly forty years previous, and need we mention we have a Royal Hibernian Academy established since early in the present century? With the existence of even the above three societies in our midst, no small results in the furtherance of science, art, and literature might be expected. The Dublin Society has been true to its name, and has in past years to a great extent led to the improving of "husbandry and other useful arts." The Royal Irish Academy has from time to time shed a good deal of light in the way of antiquarian knowledge, helped in the expansion of science, and developed some taste for polite literature.

In the present year of grace, 1878, and for some time back, what are each and all of our learned bodies doing? In sober earnestness we ask the question, and it may as well be asked by true friends of these bodies as by inquisitive strangers with some ulterior object in view, which it would not be hard to divine. We desire to see the list of our literary and scientific societies in Dublin swelling year after year, but we also desire to see the members of these bodies making themselves useful to their country as well as ornamental to the lists in which they figure. There are, no doubt, in all our societies members whose outside active business avocations prevent

them from being of more use than paying members, but there are members of others with a sufficiency of spare time on hand who might reasonably be expected to devote some of it to the furtherance of the objects of the societies of which they are members. Council members of our learned bodies particularly are called upon to shew their activity, and they are only incumbrances and drag-chains if they occupy seats that could be filled by more active, willing, and industrious members. There is a sad falling off indeed in the labours of the members of the council of some of the above bodies, and we wish to draw particular attention to the fact. Outside the council of these bodies the ambition of some individuals seems merely to be proposed and to acquire the right of affixing M.R.I.A., R.D.S., or R.H.A. to their names. As soon as this obstacle is surmounted, the noble Celt or Anglo-Celt turns his back upon his native city, and if he be a B.A., an M.D., or an LL.D., with the additional letters he sports his hitherto unnoticed name in the pages of a London miscellany or newspaper, or gets some friend to read a paper for him in one of the many minor literary circles of that great metropolis.

It is not our intention to make any invidious remarks in relation to individuals, but we have noticed for some time back, with considerable regret, the action of certain members of our learned bodies in Dublin. Some years ago the individuals we allude to were highly honoured and content to read or hear their papers read in their own native institutions, but a change seems to have come over the spirit of their dreams, for they have lately contracted the habit of giving their papers to the "Philosophical Transactions" of English and Foreign Institutions. We do not deny their right of doing so, if they have a glut of useful papers to spare, but surely it would more become them, as members of native institutions, to give the single papers they produce (if they are of merit) to the bodies whose insignias and titles they still flaunt. Time was, and not long since either, when the Royal Irish Academy and others of our kindred bodies were proud of their zealous and indefatigable members of council. Of the former body there are none who can gain-say the loss the Academy has sustained by the death of such workers as Hamilton, Graves, Lloyd, Apjohn, and Robinson. From the days of Richard Kirwan to a decade since, the Academy could proudly boast of a roll of labourers whose investigations led to the discovery of many scientific truths. Despite the smallness of the funds at the disposal of the society, good work was accomplished, and honour was reflected upon the Academy and Ireland.

The language, literature, and antiquities of our country has suffered grievous loss, also, on the death of several members and auxiliary workers—such as Petrie, Donovan, Curry, Hudson, Hardiman, and others, whose names will occur at once to our readers. If our learned bodies are to exist as institutions to carry out the objects intended in their formation, a change must be at once effected, or a reform instituted. To carry out this desirable reform, a good deal depends upon the sense of honour that is still existing in the hearts of the members of these bodies. If the *amor patriæ* is extinct in the heart, there can be no national honour or pride, no native and manly ambition. We do not speak in a political sense, but in one that is purely *adscriptus gleba*. The "Transactions" of a

learned body are an index to the past labours of its working council and members, but even the published essays of the active members does not prove the amount of work that has been gone through or may have been gone through ere the results were published. The libraries and appliances of some of our native bodies have been more than once utilised by members, not for the purpose of reflecting credit on these bodies, but to enable the investigators to gain an ephemeral applause outside the island. This sort of action is not creditable nor honourable; it is not far removed from the practice of the workman or the apprentice who filches his master's materials to make a piece of work for his own sale and profit.

Here, in this city, where our oldest associations and fondest memories are entwined, actuated by no other object but the common weal, and the desire to uphold the old and honoured institutions of this capital, we raise our voice to-day earnestly in remonstrance against the abnormal spirit that has sprung to life in this city, and which seems to be gaining support, and cutting at the root of all healthy life and action in our learned bodies. If gentlemen will still desire to be members—if they possess the talent—let them also determine to be workers. A supporter is not he alone who pays his yearly subscription for the honour of appending three or four letters more, or a tail to his name; but one who will strengthen a society by labour or serviceable presentations. To young members with the green bark of the college still on their foreheads and knuckles, and possessed with a *cacœthes scribendi*, to them we would say, give your crude thoughts and papers to any association you like. If your literary ardour cannot be cooled, so much the worse for yourselves, for the first publication of your maiden efforts will be sufficient punishment for you. Papers written by those who sign F.R.S. or M.R.I.A. should represent worth, and when they do, it is unnecessary to say to which direction the credit should attach. We hope yet to see our native bodies infused with new blood, and occupying even more elevated positions in the world of literature, science, and art, than they have hitherto, even in their palmiest days. Neglect and danger is, however, apparent on all sides in connection with our learned bodies in this city. So much for to-day.

STREET OBSTRUCTIONS, AND CORPORATE AND POLICE NEGLECT.

We have repeatedly directed attention to the dangerous, disgraceful, and illegal obstructions in our thoroughfares north and south of the Liffey. Traders and shopkeepers, for causes which are easily explained, are allowed to do as they like in the display of their wares. In London and the chief cities and towns in England, and in some of our own provincial towns, the authorities have latterly been bestirring themselves, and are actively engaged in suppressing nuisances by inflicting heavy penalties for offences against the Sanitary and Towns Improvement Acts. Here in Dublin our model Town Council will do nothing in the matter of obstructions, and the majority of the members at the present moment are winking at the brazen effrontery of many of our shopkeepers, and the disgusting public exhibition of their manifold wares on the footpaths and pavements.

Let us pause for a moment. The ward

elections take place next month, and Town Councillors Softsoap and Slyboots, will be seeking re-election. The petty dealers in barrelled herrings and salted cheeks, the *soi disant* Italian purveyors of Dublin will, with their green grocery and furniture broking brethren have votes, and their good will, which means their suffrages, must be secured. There are not a few of the Cork-hill magnates who can afford to lose a vote, and public convenience, and public health, is a matter of small consequence to them, so long as it does not interfere with their own comforts. There are many other reasons, too obvious to our citizens to require pointing out, which explain why our public thoroughfares are full of filth and full of obstructions. The whole may be summed up in the words dishonest representation and criminal corporate neglect. If the Corporation will not do their duty, the Irish Executive and the Commissioners of Police are called upon to do it. The law is openly infringed every day, and the local authorities on the one hand, and the police authorities on the other, not only shrink from doing their duty, but knowingly and purposely avoid doing it. The law as to what are public obstructions is plain and simple enough, and we shall give it here for the information of the police, the Corporation, and the outside public:—5 and 6 Vict. c. 24, sec. 17, "Every person who shall expose anything for sale . . . upon, or so as to hang over any carriage way or footway, or on the outside of any shop, or who shall set up or continue any pole, awning line, or any other projection from any window, parapet, or other part of any house, shop, or other building, so as to cause any annoyance or obstruction in any thoroughfare." Penalty, 40s.

This is, we should think, clear enough; but if the Corporation will not exercise their powers, and the police do their duty, a way must be found on the part of one or more of our citizens of testing the force of the act before the police magistrates. For our part, we are determined to make an example that will prove a lesson to those concerned on all sides.

Since the above was written, we are gratified from the report of proceedings in police courts on Saturday last, that ten shopkeepers in the Pembroke Township were summoned for having caused obstructions on the public footpath by placing goods outside their establishments. The first case heard was that of Mr. Kearney, of 8 Upper Baggot-street. Mr. Ennis prosecuted. Mr. J. O. Byrne, instructed by Mr. Fitzgerald, appeared for the defendant. Mr. Evoy deposed that the charge against Mr. Kearney was that he placed potatoes and vegetables on the footpath opposite his shop, obstructing the thoroughfare to the extent of 2½ ft. Mr. Byrne raised a preliminary objection, and requested that as the case involved an important principle, the hearing should be postponed until Mr. O'Donel, the regular magistrate of that court, sat. Mr. Dix adopted this course, and adjourned the hearing of the summonses for a week. We hope the magistrates will strictly enforce the penalty in each case, and thus warn traders in future not to intrude their goods on the footways, to the inconvenience of the public. The display in every quarter of the city of disgusting pork and pigs' heads, with brine running down the footways constantly, should not be permitted.

THE RATHMINES PUMP.

For the last half century—until the 15th ultimo—there stood nigh to the point of junction of the Rathgar and Rathmines roads, a pump from which poured forth copiously as required volumes of the purest and sweetest water. So celebrated was this spring, that few wayfarers, in winter or summer, passed by without refreshing themselves by partaking of draughts from it—in fact it was considered by many citizens as directing their attention from the merits of the world-renowned "Carton's pump."

At length the pump was considered an eyesore by a next-door neighbour—a publican,—who, whether from its proximity to his tap, thought it led customers to give it a trial, or to his tap-room, believed it impeded their progress thither, it was determined by him that the village pump "should be removed"; and this was effected by the worthy trader alluded to, who with two of his assistants on the date mentioned, cut down the top portion of the pump level with the earth, placed a flag over it, and thus were the shopkeepers, gentry, and inhabitants of the vicinity generally, left without that bounteous supply of clear water with which the Almighty blessed the locality.

The place was left many days without a substitute; at length, however, a small fountain was erected close to the site of the pump, which, being supplied from the Grand Canal, is of an inferior description to that of the Vartrey, and very much below what for so many years had flowed from the source now closed up.

Opposition to the vintner's bold act would have indeed been formidable, were it not that he had promised to erect a metal pump in its stead; this, however, has not been done, and the inhabitants of the neighbourhood—merchants, traders, and gentry—have joined in a memorial to the Commissioners of Rathmines, praying for its restoration.

We trust the people of Rathmines, like those of Artane and Coolock, will be victorious; meanwhile, we would ask, who gave the authority to cut down the pump; why; and what reason can there be for withholding its immediate re-construction?

BOOKS RECEIVED.

Report of the Executive Committee of the Dublin Sanitary Association, &c.

We have already noticed the matter in this Report on the occasion of the general meeting, but we are now glad to see it in pamphlet shape. It is on the whole a very clear statement of the establishment, progress, and labours of the Dublin Sanitary Association, and of its application and contact with the Public Health Committee of the Corporation, with a view to the improvement of the sanitary condition of Dublin. The Appendices B, C, D, E, and F, will remain a valuable record, to the discredit of the Corporation and to the credit of the Association. The appendices will hereafter be most useful as a reference, shewing the nature and extent of the Corporation scavenge depôts, and of the ills and scandal they were productive of, the correspondence that took place, the suggestions made, and the replies given on the part of the Corporation when asked for assistance, &c. There is also the information with regard to sanitary arrangements in English sanitary districts compared with that of Dublin, and "Vital Statistics" of London and Dublin during a period of twenty weeks. As we have said already, this report will have its value hereafter; we repeat we are glad to see it in pamphlet form. It is an evidence of work done, and, considering the difficulties, the Dublin Sanitary Association are entitled to public thanks for their past labours.

SANITARY AND OTHER NOTES.

DUBLIN.—Strong complaints are still continued to be made in regard to the leakage from the Royal Canal Dock, between Sheriff-street and Newcomen Bridge, by which the public sewers are flooded. In the North Dublin Union the nuisances existing at Howth—alluded to in our last issue—were brought under notice. The Chairman stated that the Local Government Board would be informed that the board had directed summonses to be served upon the occupiers of the houses having no sanitary accommodation, but that they could not take any measures with regard to the passage in question, which Lord Howth, if he had the power, ought to apply to have closed up if the people of the neighbourhood did not keep it in proper order. *In re the City Basins*, it was suggested at a meeting of the Citizens' Committee, that a public meeting should be held as soon as possible, in order that the feelings of the different wardmen be tested at the approaching municipal elections. It was also agreed to ask the co-operation of the various trades to aid in the effort to secure the basins for public swimming baths. During the past week a large number of persons were summoned for offences against the sanitary laws, and orders made in each case for abatement of nuisances. Warrants were granted for the apprehension of two ladies who had failed to pay penalties of 10s. each for infractions of sanitary regulations, the one at Castle-street and the other at Kilmainham, and for their imprisonment in Grangegorman Penitentiary for five days in default of payment.

BRAY.—At a meeting of the Commissioners held on Monday, the subject of the proposed erection of lime-works on the bank of Bray river, near the principal buildings of the town, was entered upon, and it was resolved that final action should be deferred till legal advice had been taken in the matter. Counsel's opinion having been obtained by the board relative to the encroachments on the footways by certain traders in the Main-street, this opinion was ordered to be communicated to them.

CORK.—The sanitary condition of Cork has improved of late, but much remains to be accomplished. There are many foul spots under the shadow of Shandon steeple. The Cork Harbour Board have agreed to the principle of providing additional dredge appliances, in order to deepen the river and bring up the trade which it is endeavoured to keep down the river. The dredging, when accomplished, along with the removal of other nuisances in the city, will make

"The bells of Shandon
Sound far more grand on
The pleasant waters of the River Lee."

We are glad to perceive that a Sanitary Association has been formed in this city, on the same plan as adopted by the metropolitan one. The Mayor is the president.

RATHDOWN.—At a meeting of the guardians of this union, a letter was read from the Local Government Board, calling attention to a new kind of iron hospital, suitable for cholera or small-pox patients, procurable for from £200 to £300. The chairman pointed out that this board, having already ordered a wooden erection, the notice did not apply to them. Items for payment, amounting to £7,500, were read out by the chairman. For six months the amount for whiskey was £103, and for porter, £109, both for use in the infirmary. Mr. Verner, Mr. Crosthwaite, and others, objected to this as excessive. The chairman stated that these items were completely under the control of the house doctor. A resolution was passed recommending the matter to the attention of the medical officers.

TRIM.—At a meeting of the commissioners, the question of the drainage of Scarlett-street was taken into consideration, and three members were appointed to act as sanitary

commissioners, viz., Mr. James Blake, Francis O'Reilly, M.D., and Mr. Richard Davis, under whose direction Mr. Patrick Davis is now carrying out very effective sewerage, which will be a vast benefit to the poor of that locality and to the borough in general. Some two years ago Wellington-street had been drained by the same contractor, and it is in contemplation to carry out from time to time such work until the town is thoroughly drained in every part. It must not be supposed from what we have stated, that this town has been in a deplorably unsanitary state; we willingly bear testimony to the fact that it is one of the cleanest and most healthy to be found in the entire county. We hope the commissioners will not, however, relax their efforts for its thorough drainage, and thus set a good example to other country towns.

CORRESPONDENCE.

THIRD-CLASS CARRIAGES.

GREAT SOUTHERN AND WESTERN RAILWAY.

SIR,—I had occasion to travel to town on the 28th ult., and thought the third class would suit well enough. The morning was wet and unfavourable, and, in the course of the three hours' time spent in what seemed to be more adapted for the accommodation of swine than human beings, the rain came down through the roof, and necessitated the use of umbrellas! A lady's little bonnet got saturated with wet. I beseech you, sir, to hold up to obloquy the niggardliness of this monopolizing company, and shew them that the third-class passengers are not to be thus treated with impunity. FIDES.

Bagenalstown, 20th Sept., 1873.

[The disgraceful state of the third and even second class carriages on more than one of our Irish lines calls for Government interference. We understand it will be brought under the attention of Parliament next session by an Irish member. In the meantime a travelling sanitary inspector ought to be appointed by the Local Government Board.—Ed. I. B.]

DRAMATIC QUERIES.

"If the cap fits, let it be worn."—*Old Saying.*

ARE Dublin theatres started and carried on to elevate the drama, or elevate the lessees or proprietors? Which?

What are managers intended for? and should not a manager be a gentleman, a scholar, and a good judge of acting? Are ours so?

What are deputy managers, and has a manager of a playhouse need of a deputy at all? If he is above the duty of superintending the business of his theatre, or is incapable to do so, is he not unfit for his position?

What is the first duty of a manager? Is it not to please the public? Do ours manifest this disposition?

What is the second duty of a manager? Is it not to act with kindness, and be liberal and impartial to the performers? Are ours so?

What parties ought a manager most to avoid? Are they not the class of favourites, sycophants, and the penny-a-lining factotums of some of our public journals? Do ours do this?

What ought a manager of a new or an old theatre most liberally reward? Is it not merit? Do all or any of ours do this?

What is the most hateful and deadly sin in a manager? Is it not humbugging the public? Do any of ours ever do this?

What are a manager's greatest acts of meanness? Are they not oppressing the poor performers, and paying large sums and giving plenty of orders for hiring puffs in newspapers, right and left? Do ours ever do either?

What is a Dublin lessee or manager's idea of art at the present moment? Is it not that secondhand stage property and scenery, like secondhand clothes, will often wear as well, and answer the purpose as well, as new? Do any of ours act up to this belief?

What is a manager's opinion of that great organ of public opinion, a "free Press"? Is it not that a few "free passes" and an order for a daily advertisement would "buy the whole lock, stock, and barrel" of the fourth estate, with perhaps an honourable exception or two? Do ours think so, and profit by the faith that's within them?

What are managers' opinions in general about the "Opinions of the Press"? Are they not similar to those entertained by medical quacks, who consider it a good stroke of business to secure a puffing testimonial? Do any of ours entertain such thoughts, and consider it a matter of business?

What ought a manager's private conduct be, despite his public sins of omission and commission? Well, with that we have nothing to do, so we will drop the curtain here. SMOCK ALLEY.

IRISH ART.

A CELTIC cross in memory of the Countess of Durham, recently completed by Mr. W. Doolin of Westland-row has been on view for some days. It is executed in Irish limestone from the designs of Mr. Thomas Drew, R.H.A. The cross itself is in a single stone, 16 ft. high, and is covered with richly sculptured interlaced ornament in panels, each of which is an authentic study from an ancient model. On the front the four arms bear the four evangelistic symbols, having in the centre the sacred dove. On three sides of the base are large alto-relievi representing, severally, "Christ Healing the Sick," "The Good Shepherd," and the "Raising of Dorcas from the Dead." The inscription occupies the fourth side. This cross is to be erected in the churchyard adjoining the residence of the Earl of Durham.

The *Cork Examiner* gives a description of the illuminated address which the corporation of that city are about to present to Mr. Pope Hennessy, now Governor of the Bahamas. It has been executed by a local artist, Mr. J. J. Coakley, in the richest style of fifth century illumination. It comprises the city arms, views of Cork, of which Mr. Hennessy is a native, including the docks in process of construction near Haulboline, a scheme of which he was a promoter. There are also views of the Houses of Parliament, in whose debates he at one time took part, and of African and American scenery. Distributed over the border are representations of animals indigenous to the country where he has held a public position, as also of the Irish bard, with the national wolf dog crouching by him. The address measures 29 by 25 in., and has a massive gilt frame, manufactured by Mr. Bermingham, of Cork.

THE DUNKELLIN STATUE.

ON Monday, 22nd ult., the statue of Lord Dunkellin was unveiled at Galway. It has been a considerable time in the hands of Mr. Foley. At the ceremonial, there were a good many influential personages present. The statue is bronze and stands about eight feet high from the base. The costume is in ordinary morning dress, and in this particular will not please the advocates of an adherence to the ancient garb common to sculpture. The arms are shewn as folded, and the left leg is slightly advanced, the head is thrown slightly back, and inclined to the left. The pedestal is about eight feet high, and stands on two steps of Aberdeen granite. The upper part is of Peterhead red granite. The inscription runs as follows:—"Lieut.-Colonel Lord Dunkellin, M.P. for the County of Galway; born 1827; died 1867. This

statue is erected by the inhabitants of the County and Town of Galway as a tribute of affection and respect to his memory, 1873."

Lord Clonbrock, who unveiled the statue, read an address "To the Chairman of the Galway Town Commissioners," and Mr. John Redington read a reply on the part of the Corporation, "To the Committee of the Dunkellin Monument." The statue is a well executed one.

HOME MONEY v. FOREIGN MANUFACTURE.

THE following extracts from the proceedings of the Dublin Trades Association tells its own tale. We are not senseless advocates for everything Irish, but we are advocates for reasonable fair play. It is not long since a well-known bishop threatened us with an action for daring to say that a certain Italian importation was made at the cost, or at least to the injury of, his countrymen who were contributing to beautify his church, as they contributed to build it. We could give a long list of ecclesiastical work which was procured from abroad that could have been executed in Great Britain and Ireland better and far cheaper. Orders very often go, or have often gone, from Dublin, Cork, and other cities in Ireland, to France, Germany, and Italy. Kilkenny, Killaloe, or Connemara marbles would not smell sweet, neither would good English limestone or Dalkey granite, yet the money that was paid for it was deemed sweet enough, and the subscribers complimented as the most "virtuous, simple, and confiding people on the face of the globe." But enough:—

Mr. James Clarke introduced an influential deputation from the coopers' society, who complained of what they believed to be a great injury to Irish manufacture. The society had subscribed £30 to the building-fund of the new church of the Augustinians, in Thomas-street. They, with other trades, gave their donation not only freely, but enthusiastically, as the working classes always do, to build up churches for divine worship; but in giving their money they did not expect that it was to be spent on foreign work. On a recent occasion the windows for the church were brought over, he (Mr. Clarke) believed, from Germany. That, however, they let pass unnoticed; but later on designs and plans for the iron railing were prepared by the architect, and employers in the iron trade invited to send in tenders in the usual way, but to their amazement they learned that a Dublin agent got the commission, which, for aught they knew, is being executed either in Birmingham or Munich. Mr. Hogan spoke in strong condemnation of the system which excludes everything Irish, even in our own country. He did not wish to bear hard on the clergy, but why, he asked, should not they be as anxious to promote home manufacture as the poorest artisan? Mr. Crooke said that he, as a smith, sent in tenders for the work. The rev. gentlemen not clearly understanding the character or style of the work, he made specimen sections of bars, panels, &c., from the architect's drawings for approval, and to his astonishment, when he went to look for his working models, he learned, for the first time, they had been given to the agent, who had sent them to England or wherever the work was being made. He (Mr. Crooke) would not complain if a Cork, Belfast, or any house in Ireland got the job, but it was really hard to see money collected from the poor, and sent out of this poor country, for work which could, without the slightest excuse, be had at home. Mr. Burke spoke in indignant terms of the system of importing ecclesiastical work. The Irish people, he said, are puffed and blown from Ireland to America on their extraordinary talent for producing art and art-workmanship from the mediæval times down to the present hour; but, when a job of work is to be done—be it the building of an organ (as in the case of Marlborough-street), the building of an altar, the erection of a stained-glass window, a statue, or even a brass candlestick—the order must go to a German Jew or a Birmingham house. He (Mr. B.) asserted the remedy lay with the people themselves. Until they learn the absolute necessity of withholding subscriptions until a guarantee is given that the money shall be spent at home, the grievance will continue. It was ultimately resolved that a deputation now wait on the rev. gentlemen to remonstrate against the act of sending out of the country the work in connection with the iron railing for the new Roman Catholic Church in Thomas-street.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

OLD GARDEN-SQUARE.

(The Three Rows.)

SOME of our earliest boyhood perambulations were made around the historic "Rows" that enclose Old Garden-square on three of its sides. Despite the spirit of exclusiveness, the railed enclosure of grass-plot, trees, shrubs, and gravelled walks form still one of the lungs of our modern neglected capital. Changes have been about here as everywhere, yet there are some spots that never change until they wholly disappear. No matter how busy or meddlesome modern ways, manners, and fashions may be in having their own tints, colours, and names, the spirit of old times lingers over its whilom haunts for good or evil. If good and bad deeds are not perpetuated by history, they will be by tradition; and it is so with old names and memories. Our laws are but the reflex of the spirit of the age in which they are passed, but tradition outlives the repealed and unrepealed enactments of generations. The three historic "Rows" of Old Garden-square bear still their ancient names, although the space they surround has been squared nigh a century since. The New Gardens are new no longer, and are known betimes by other names, from viceregal and architectural changes.

The occupants of the dwellings around are different in taste and manners, in status and movements, from what they were even fifty years since. The dilettanti peers and earls have vanished; the fire-eating M.Ps. and limbs-of-the-law that winged their adversaries by way of a tonic before breakfast are extinct; the octogenarian marchionesses and dowagers who were carried out on evenings to balls and masquerades by the sedan chairmen, and whose powdered cheeks and locks deceived the gallants, and put to shame the Lady Arabellas of nineteen summers and their noble mammas—all are withered and gone!

Noble brick-built dwellings are around here on all sides, with fine old out-houses and stabling to boot. The area basements and railings show strength and durability, though the type of the latter is old. The steam hammer of the modern founder was unknown when the strong sledge-hammer blow of the swarthy Dublin smith welded and shaped these pallisades. The approaches to the hall doors are wide, and the steps are built to bear and to wear. The entrance doors themselves are thick, raised-panelled, and well hung; the halls are lofty, long, and are of a width that can afford a useful hall table and suite of chairs; the stairs are wide and easy of ascent, and are well lighted. A massive and well-formed scroll begins the moulded handrail, standing solid and perpendicular over its plan, from curtail step to cylinder. The chimney-pieces in parlours, back and front, and drawing-rooms are elaborate in marble or stucco decoration. The folding doors are not confined to the drawing-rooms alone, but are to be found in both of the principal floors. There is a dado with a deep skirting and ornamental surbase along the wall. The backs, elbows, soffets, and linings of the windows are framed, panelled, and moulded. The architraves are double-faced. The mouldings of the shutters and other framings are struck in the solid, and enclose mirrors; and many of the panels of the doors, shutters, and other fittings are raised and moulded: but we need go no further, save to add that the joinery and fittings everywhere shew that when the workmanship was first executed it was of the best description, materials included.

The stucco ornamentation on ceiling, cornice in hall, drawing-room, vestibule, or library proves that the old stucco-workers of the last century were not mere floaters and plasterers, and casters of eggs, ovals, and darts, but were executive artists who worked with brain and hand. Old Garden-square may feel proud of its old mansions still,

though the "jerry" builders of the last quarter of a century have despoiled some of the interiors. Many a roof has been stripped of its thick lead covering, in guttering, flashing, and filletings, and replaced with the modern tinfoil quality. The jobbing scamp finding a treasure-trove on the house tops, had it lifted, on the pretence that the weight of the article was crushing the roof; the plumber coincided, and the handy labourer was of the same opinion. Few men, we opine, of the class that once lived in Old Garden-square were ever upon the roofs of their own houses. Servants and cooks in certain families of the "upper ten" resent the intrusion of "high life below stairs" in the persons of their mistresses, not to speak of their masters; but we are of the opinion that it is as necessary betimes for the masters and mistresses of the house to poke their noses into their own kitchens, as it is into their own cabinets. If it was only in the matter of health and comfort, the owner of a dwelling ought not to be above the duty of looking after the state of his own drains below the basement, and his gutters above the parapet. An honest contractor will not suffer in consequence.

The thread of our discourse will be cut, and further digression prevented, as here comes the "Oldest Inhabitant," who has forgotten more than we remember of Old Garden-square.

"I will endeavour, Mr. O'Flanagan, to recall a few of the chief items of interest connected with this truly historic quarter. Although my memory is rather sluggish compared with what it has been, yet I may satisfy your mind that the associations of Old Garden-square are not confined to a few fading traditions of actors who lived only for themselves and the amusement of the public. Many of the residents of the three 'Rows' were in their day the greatest ornaments of the court, senate, bench, church, army, navy, and medical profession. Lovers, sir, they were of learning and the arts; and not only lovers, but workers.

"As you are fond always of hearing of the old notabilities that once resided in the places we are visiting from time to time, I will recount to you the names of a few of the public men that resided on three of the sides of Old Garden-square towards the close of the last century. Firstly, among the lords there were James Caulfield and Barry Maxwell; among the viscounts there were William Willoughby Cole and John Creighton; among the barons, John Henry Upton and Edward Michael Pakenham, and here also resided Dr. Walter Cope, bishop (Leighlin and Ferns); among the Irish M.Ps. of a native legislature, some of whom were titled and notorious otherwise as well, were Sir Richard Butler, Bart.; Lord Viscount Luttrell, George Montgomery, Thomas Adderley, Arthur Dawson, Hon. Robert Howard, Clotworthy Rowley, Andrew Caldwell, Charles Cobbe, Hon. A. Cole Hamilton, T. Burgh, James Alexander, Hon. Thomas Pakenham, Right Hon. Sir John Blaquiere (after whom one of the bridges on the Royal Canal is called), Hugh Howard, Andrew Ram and Abel Ram (the Rams of Gorey), N. Montgomery Moore, and William Handcock. The law was represented by Thomas Borroughs, a Master in Chancery; the Right Hon. Thomas Kelly, Third Justice of the Common Pleas; the Right Hon. Earl of Farnham, Prothonotary; Hector Graham, Secondary, and also clerk to Mr. Sergeant Toler, afterwards Judge Toler; Peter Metge, Fourth Baron of the Exchequer, who lies buried, I believe almost unknown, in the old village churchyard of Finglas, not far from where the remains of Lanigan, the ecclesiastical historian, sleep.

"The 'Three Rows' of Old Garden-square were once the town residence of a number of other public men of note—professional men and merchants, proctors, prelates, judges, barristers, and others. Titled nobility are now very sparse around here, and, though professional respectability is not yet absent, the status of the residents is below what it was in my early days. Perhaps respectability

which includes honesty of purpose is, after all, the true nobility; and I hope that it will always be present here and everywhere, though the hope may be vain in these days.

"Of the buildings, benevolent and public, that flank the lower or street line of Old Garden-square, I believe I have mentioned a few general particulars on our former visits to the neighbourhood; but commencing with the 'Rows' proper, there are additional buildings built upon a portion of the garden ground which deserve some passing notice. They are the erection of a later period in the eighteenth century than the front or street structures, and are also the work of later architects. This wing on the east of the square was once called the New Rooms, to distinguish them from the Great Oval Meeting Room, which was built in 1757, the year the Maternity Institution was opened. The new rooms were begun in 1785, and are said to be the design of Richard Johnston, assisted by Frederick Trench. I am inclined to believe, sir, that it was Francis Johnston, the founder of the Royal Hibernian Academy, who designed these rooms, for I never heard of a Richard Johnston in this city who was an architect. Francis Johnston must, however, on the other hand, have been a very young man at that time, and his practice had not commenced in Dublin to be publicly known until the beginning of this century. There was a William Johnston, an architect, at Armagh, about 1790, or previous, a member of the same family as Francis; and I was told once there was a Richard, an uncle of Francis, who practised in the north of Ireland.

"The Viceroy in 1785 laid the foundation stone of the new rooms. These rooms within my time have been called by different names—the Ball Rooms, the Supper and Tea Rooms, and otherwise the Exhibition Rooms. Smaller rooms have been provided during recent years for committees and minor public meetings, but the original rooms, in appearance at least, have undergone some changes within. The lesser rooms were originally intended for cards and refreshments, but I am not aware that any of them were used for smoking rooms as we understand smoking rooms in these days.

"Weekly concerts were held in these superb rooms at the close of the last and the beginning of the present century; and numerous subscription balls were got up every winter, supported by the nobility and gentry of the city, and every season witnessed a masquerade or two. The tympanum of the pediment which we see on the exterior is ornamented with the arms of Ireland, and the crest of the Duke of Rutland, the viceroy who laid the first stone. The Great Oval Room, to which I alluded on a former occasion, witnessed many a stirring social, warlike, and political event; but the entertainments once witnessed there, when we had a resident nobility, were far different from what has been seen for the last half century. The winter amusements formerly were grand in the extreme. The Oval Room was thrown open on Sunday evenings in summer for a promenade, and on these occasions tea and coffee were given in the contiguous New Rooms.

"The gardens, sir, in my opinion, have been badly laid out and managed from the beginning. What was once called a 'romantic hollow' below the terrace on the north has been long a 'sleepy hollow,' and has been converted to multifarious uses besides a bowling-green, for which it had been originally intended. The gardens were originally surrounded by a high dead wall, but during the governorship of the viceroy already mentioned, the old wall was taken down, and the iron railing you see there and the dwarf wall on which it stands was erected. A number of antiquated oil lamps formerly surmounted these iron railings at intervals, which helped to throw light on the subjects within and without. From the depths of 'Sleepy hollow' within many a deep shout, thundering salvo, and reverberating echo issued. Wild quadrupeds

and wilder bipeds, beasts of prey and beasts of burden, actors and wizards, equestrians and aeronauts, pedestrians and pickpockets were to be found at times here. The public had to be pleased and charitable institutions had to be supported; and if country cousins went home not satisfied with the amusements they beheld, the source of their agony might be traced to other light-fingered gentry than the Wizards of the North they had witnessed. Charity, sir, covers a multitude of sins, and in the search of harmless amusements we must be prepared to lose something, or suffer some temporary inconvenience even if it went no further than the disinterested squeeze of clodpole's brogue upon our aching corns.

"Passing upwards towards the northern heights, we reach the sunnyside of old Garden-square. The old garden or gatehouse with its Tuscan columns is here within the railings still; and, bless me, but here too is the old recess where the ancient sedan chairmen sat waiting for a call. While the two-wheelers alone existed, there was hope still in the hearts of the last of the Mohicans who kept vigil in the silent shades of Yewme-street and the northern slopes of Old Garden-square. The advent of the Dunleary Railway and the subsequent innovation of the four-wheel crawlers on our public streets gave the last finishing blow to the poor chairmen. Stout, supple, civil, and cleanly shaved and dressed members of society were the chairmen of old. They continued their peculiar costume till nearly the last in coats, hats, and knee breeches; and stoutly they resisted the ignoble use of trousers, which they considered were only designed to hide the spindleshanks of a degenerate generation who had no calves, and took to wearing socks also from pure laziness to tie their garters.

"Yonder there, is Caulfield House, with its light and brimful memories of artists, architects, authors, poets, painters, prelates, men of law and men of science, men of war and men of peace, and a galaxy of brilliant guests and visitors of both sexes: but I must stop for to-day. On another occasion, and at an early date, I will finish my gossip anent the memorable "Three Rows," and the whilom racy residents that lived around or frequented Old Garden-square."

The evening was closing fastly, and the lamp-lighters' duty was nearly finished, when we parted—to meet again, we hope, as we met often before—with the "Oldest Inhabitant."

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

[Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

SEMPLE proceeds with his observations concerning oak and fir timber, and the olden and common mode adopted for its preservation, when intended for damp positions or under water.

THE PRESERVATION OF TIMBER.

"I once happened in company with a very ingenious gentleman—one Mr. Smith—who was so kind to communicate a secret to me, which struck me greatly, and I instantly put it in practice, and I am now convinced it is an excellent method to make red fir timber near as durable as oak, i.e., after your work is tried up or even put together, lay it on the ground with stones or bricks under it to about a foot high, and burn wood (which is the best firing for that purpose) under it till you thoroughly heat and even scorch it all over, then whilst the wood is hot, rub it over plentifully with linseed oil and tar in equal parts, and well boiled together, and let it be kept boiling whilst you are using it, and this will immediately strike and sink (if the wood be tolerably seasoned) one inch or more into the wood, close all the pores and make it become exceedingly hard and durable either under or over water, and if there should be any sappy parts in it, they will receive such

benefit by the fire and heat of this natural and penetrating liquid, that they will also thereby become exceeding durable. Good red fir prepared after this manner will for many uses last as long if not longer even than oak timber, especially in water; and if good fir timber is constantly kept in water, it will keep fresh and sound much longer than oak.

"I have often seen slating and plastering laths clove out of bog oak and bog fir. In cleaning the fir laths, I frequently observed the turpentine as fresh and firm in it as if it were perfect resin, and I have heard of splinters of this wood being used not only for torches but by poor people sometimes as candles. In the butt of a clean trunk of a bog fir tree it will split thin and tough like whalebone. It is a generally received notion that the timber trees which are found in such abundance in some of our bogs have lain there since the great Deluge, but be that as it may, the bog oak timber is always found to be frusky, dozed, and short-grained, and not near so sound as the fir timber, tho' both taken up at the same time out of the same bog. Hence, I think we may safely conclude that red fir timber is exceeding durable, and consequently unexceptionable as to our present purpose, provided it be kept entirely under water; therefore, let us determine to make our coffers of good sound red fir timber, and keep them under water as much as we conveniently can."

[Methods for the preservation of timber intended to be used under and above water since Semple's time have been many, and many of them have proved signal failures, though patented for protection. Dry-rot solutions during the last thirty years have been common, and two of them have been accounted partially successful—Sir William Burnett's process and Kyan's. By the first method the wood was soaked in a solution of chloride of zinc, and by the latter the pores of the timber were filled with a solution of bichloride of mercury forced into them by the air pump. Common salt (chloride of sodium) is said to protect timber which is well impregnated with it. Sea water has been found to counteract fungus in timber. Timber impregnated with sulphate of iron has also been found to prevent putrefaction. Quicklime, though it assists the decay of timber when aided by moisture, yet a large quantity of it in connection with the wood has been proved to have strong preservative qualities. Sulphate of copper and coal tar have both been found effectual according to the intended uses. Of late years creosoted timber has been used for sleepers for railways and tram lines, and a combination of other methods. Some of these methods are unfitted for being used for timber in buildings in an exposed situation, where paint or varnish has to be used. Where strong smelling substances such as gas tar are used, they are objectionable, except where the timber is covered up or used under ground or water. Charring is a very old method, and, where used, provided that the timber is well seasoned, it will be found a safe process for timber under water or in damp positions. Semple's method, already given—that of using linseed oil and tar in equal parts, and applied in the manner stated above,—will be found as good a process as any for timber under or over water. Several methods for preserving timber against the action of worms on land and in water have been recommended. Oil of spike, oil of juniper, linseed oil, copal varnish, sulphur immersed in nitric acid, lime, and an infusion of quassi. In ship's timbers and in piles sunk in piers and harbours, the ravages of worms and other insects are great, and various methods have been used, but only with a partial success. Mixtures of lime, sulphur, colocynth, with pitch, have been recommended and used for the protection of planking and boards. Whale oil, too, has been used with some effect, and different poisonous ointments. Corrosive sublimate, arsenic, and essential oils have been recommended, and used in places with effect in destroying many of the ants which affect building timber. After all, the prime

essential is, we think, to procure well-seasoned timber before subjecting it to any process. Timber is found rotten in the core often where decay is known to set in even when the outside is quite sound. Sappy timber should always be avoided; and neither the charring nor painting of green timber, or the adoption of any of the above methods will be found serviceable to make up for the want of well-selected and seasoned timber.]

THE OLD BRIDGE BUILDERS.

"There have been several methods practised by illiterate country masons, who have built good rough stone bridges over shallow water, and some of them in much deeper water. I shall mention a few of their methods, such as, 1st, *Kish-work*—that is, a kind of large baskets made of the boughs and branches of trees, about the size of 4 or 5 ft. square; these they sink in rows by throwing stones promiscuously into them till they ground [sink on the bottom] and then filling them up till the water is about knee-deep, whereon they lay timber across and so begin to build their piers, banking the kishes all round with other stones and hard stuff thrown in, in like manner. 2nd, *Keeve-work*, that is, making large vessels of red deal boards hooped both with iron and strong oak hoops, which they fill and sink in like manner, filling the vacancies between the circles, and banking them round with the like rude stones, &c. 3rd, *Chest-work*, i.e., making large chests of 5 or 6 ft. square of red fir plank dove-tailed and clasped with iron at the angles, and these they also fill and bank in like manner, which is generally among such workmen deemed a good method, because they lie so very contiguous to one another and are very durable. 4th, *Case-work*, which is of the same nature, only much larger and stronger, some of them being 12 or 15 ft. square, and filled and banked after the same manner. The 5th is generally made use of by eminent workmen in much larger works."

[The latter method is of course the caisson method of building entire piers within the one case; but, as we have already seen in "Memorials of Old Essex Bridge," Semple did not adopt it, but constructed a coffer-dam with improvements of his own. It is a long time, we think, since the kish and keeve work methods were used in these countries, yet in these simple operations we discover the rudiments of the noble art of bridge building. Let us not smile at the ways and means of our ancestors, for the great Roman road makers and bridge builders in their earlier works built in a similar manner. From kish and keeve work to caisson and coffer-dams was but a gradual and direct transition; and our greatest modern engineers, had they humility enough, might still exclaim, when beholding their greatest triumphs, "There is nothing new under the sun." Semple, in his treatise, treats his readers more than once to several useful and shrewd observations on the petrifying qualities of good mortar, how to mix, manipulate and use it. Though deficient, as we before remarked, of a scientific knowledge of the chemical properties of lime and sand, or of the chemistry of building materials in general, our old Dublin architect had great sagacity, and possessed a most valuable experience. Speaking of coffers, and the stuffing with which they should be filled to ensure a durable foundation, he starts with a proposition—"A gentleman has a basin of water in his garden; he requires a sure, quick, and cheap foundation to be laid therein sufficient to sustain a statue of lead or a stone pedestal, the plinth of which is 8 ft. square, the water six ft. deep." The observations he makes in this case in regard to the stuffing materials, are laid down to be considered as general conclusions in carrying out the greater projects which follow, and for the proper execution of which he gives plans and clear directions. We will include Semple's remarks "On Stuffing the Coffers, and Petrifications," under the following heading:—]

MORTAR, GROUT, AND CONCRETE—SEMPLE'S EXPERIMENTS.

"The word coffer is borrowed from Paladio. We shall borrow the word stuffing from Alberti, who has treated largely upon it. Observe that before the coffer is launched [*vide* proposition], you are to be provided with sufficient quantities of very small stones—clean, sharp, sandy gravel and roach lime, ready at the kiln whenever it is called for; and with these materials you are to fill or stuff the coffer, so that the whole may be justly proportioned and stuffed as solid and as compact as possible. In order to learn the true proportions and qualities of the stuffing, I made the following experiment:—I had a box made of one exact cubical foot, which held 200 stones fit for the purpose, each stone, on an average, weighing about seven or eight ounces, the whole, consequently, weighed 90 lb. nearly; the same box held about 80 lb. of tolerably dry, sharp, and rather fine sandy gravel without any sort of stones, except these small ones which are usually among sand. Part of those stones I put again into the box in thin layers, filling all the interstices or vacancies with the sand, and after that manner it contained 80 lb. of the stones and 40 lb. of the sand, and I know it would also have held the proportionate complement of roach lime—that is 10 lb. made liquid, as before treated of,—which, together with the just quantities and proportions of 10, 40, and 80, or 1, 4, and 8, which will be much easier remembered, and must be strictly observed; and to this purpose you must depend on some faithful rough mason or bricklayer, and also please hence to observe that one cubical foot of this stuffing will weigh 180 lb., which is nearly the same weight of one solid foot of Portland stone.

"There are three different methods for making use of the lime in such work as this—one is to mix the roach lime made liquid with its proportion of sand and small stones in such manner as may clothe every stone and particle of sand with it. The second, to slack and turn them all up together like mortar. The third, to lay each of the three as it were in very thin layers, still observing the same proportion. Take which of these methods you please, provided the roach lime be, however, carefully and judiciously mixed with the stones and sand, for if these materials are not equally mixed, how can you expect them to petrify and unite into one solid mass? But if they are properly mixed, the whole stuffing of this coffer will actually petrify and become one solid and compact substance, as hard and closely united together as if the same was in one block or rock; and it will be many hundreds of years before the coffer (being in water) will be in the least decayed. I have some other cautions to give you concerning the small stones you are to make use of. Let none of them exceed a handful, or one pound weight (as before mentioned), and if you can conveniently, let them all be limestone broke into stones of about that size, carefully preserving the very dust and least scrap of them for use."

[This stuffing, described and recommended by Semple, is nothing more than the system of building with concrete. More care seems to have been taken formerly in preparing what we must certainly call concrete, than appears to be taken at present by builders with the modern material, in which all sorts of shingle and ballast is used, and where particular attention is not paid to the size, no more than to the quality of the stones used. Limestone is, no doubt, preferable and superior to other kinds, for, without burning, there is a petrifying quality in the stone when subjected to certain action and contact with other materials that enter into combination in mortar, but of this, more hereafter.]

PETRIFICATION.

"I before declined touching on petrification, and I now suppose that you do admit there is a petrifying quality both in lime and lime water, and there are incontrovertible

proofs of this petrifying quality both in limestone, even without calcination. As, for instance, Doctor Thomas Molyneux, says in his *Natural History of Ireland*, 'There was one urn found in a little sandy hill near Cookstown, on the road to Lissan, in the County of Tyrone. It was covered with a great rude limestone, which, being removed in order to make lime, the urn was discovered in a hole encompassed with six stones of equal bigness, which made a hexagon in which the urn stood. The water that had fallen on the urn from the limestone, or the air condensing, had petrified and made a stone crust on the outside thereof.'

[Viewing the above circumstance, apart from the nature of our subject,—the great rude limestone—the urn and the six encompassing stones was, no doubt, one of those early sepulchral monuments which were, at one time, thickly scattered over our country. Many an interesting dolmen, cromlech, rath, and cahir, has been pulled down and destroyed, or used for building materials, and the work of destruction still goes on. The farmer views the great rude limestone or other group standing in his field as a nuisance and an obstacle. Well and good if he can blast it or pick-axe it and cart it away for road shingle, limestone, or materials for his piggery, so much the better. "National monuments," forsooth! What cares he for the "standing folly" of his Pagan ancestors, or even of his Christian ones either? The Molyneux alluded to above wrote some papers on the natural history of this country in the "Philosophical Transactions," which were included in a re-publication of Boate's "Natural History of Ireland," issued here in 1726. Boate's book does not deserve the name of a natural history, and it is a very poor performance. Rutty's history of Dublin, published in 1772, was a great advance, but still Ireland is without a comprehensive work on her natural history.]

(To be continued.)

A TOUCH OF THE "BLOCK SYSTEM" OFF THE LINE.

THE action of the directors of the Dublin, Wicklow, and Wexford Railway *in re* the *Daily Express*, is entitled to grave reprehension. The proprietor of the journal in question has acted in the only manner possible for a gentleman occupying his position could act, and the Press of Dublin in vindicating the action of Mr. Robinson, are in a manner vindicating their own right to free and independent public opinion. It is not necessary for us to say more in condemnation of the conduct of the railway directors, as evidenced in the letter of Mr. Maunsell; the tone and spirit of the letter carries its own condemnation. We have ourselves been several times threatened with the strong arm of the law for exposing public abuses, but none of these threats have deterred us from speaking the truth. If there was an advantage on the side of the *Express* in the contract entered into with the railway company, there was also an advantage on the side of the railway. The contract was a mutual one, and did not argue that fulsome praise or silence as to faults was to be the consequence if a necessity existed for speaking in the interest of the public. The *Daily Express*, by its action, will gain in the public estimation. Submission would have crippled its powers; resistance has added to its strength and influence.

Would that the Press of Dublin in other matters acted as they have on this occasion by combining and mutually assisting each other to reform the gross public abuses that exist in our midst in connexion with the Stage, the Corporation, and Swindling and Obscene Advertisements. The *Daily Express* has already fairly criticised theatricals, but what, need we ask, has been the conduct of other daily newspapers in our midst? Systematic and hireling puffery from year's end to

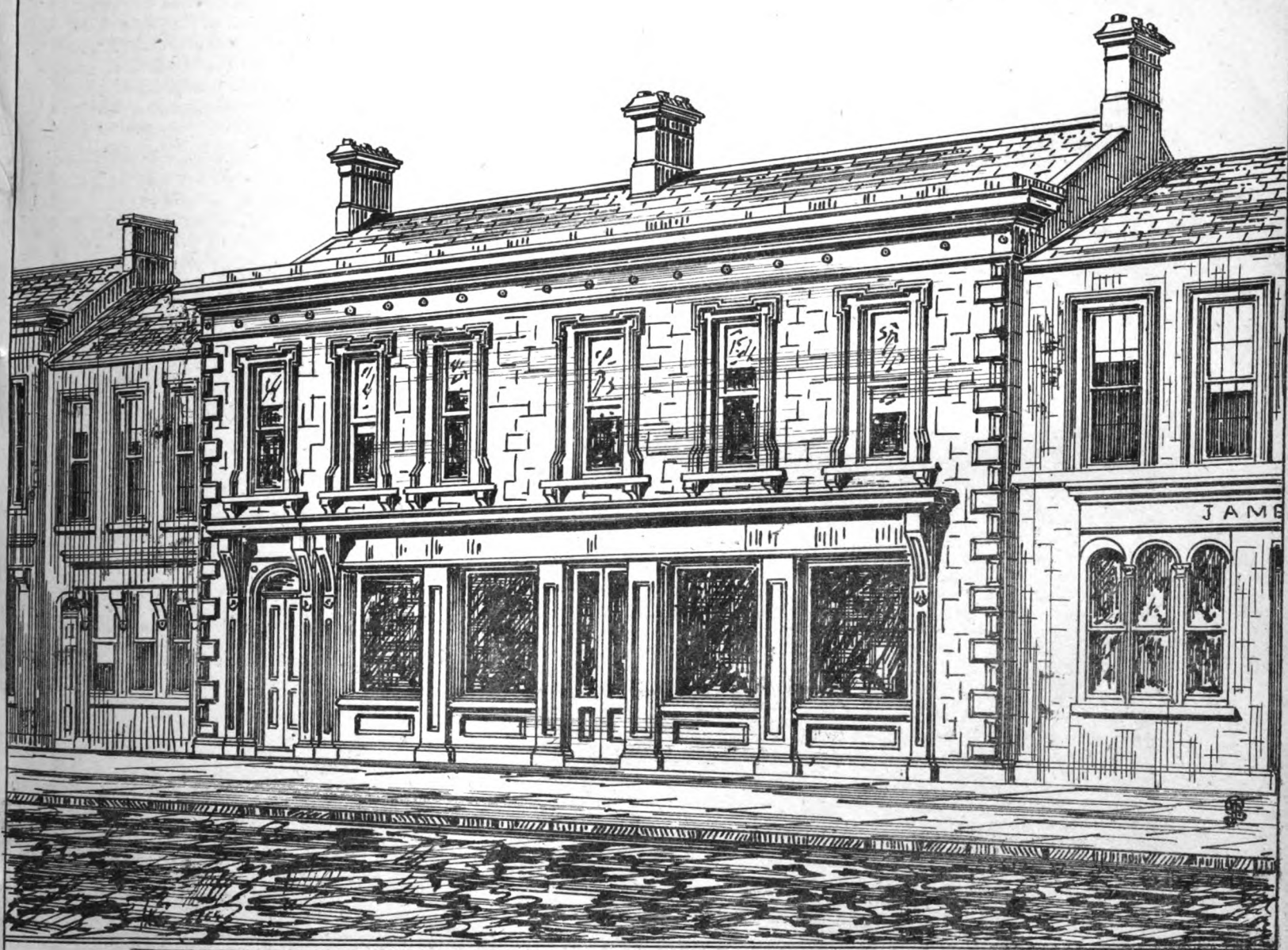
year's end, and instead of the Drama being elevated, it has been degraded.

The Sanitary wants, also, of the city have been ignored by most of our journals, and the blundering incapacity and criminal negligence of the Corporation allowed to pass unnoticed. As to the medical quack advertisements which appear in the majority of our daily and weekly (city and provincial) journals, they are a scandal and a curse to morality, religion, nature, and human nature. If our journals would combine to put down and put an end to these and other abuses which we now and so often have pointed out, they would be entitled to the nation's thanks. We have little hope, however, that a reform will soon set in in the direction indicated. The wages of sin and criminality, of foulness and feculency, will still be catered for, and the stigma will still remain upon the journalism of our city and country.

"MONASTICON HIBERNICUM," AND ITS AUTHOR.

THE work of Mervyn Archdall, since its first publication in 1786, has been the store-house of many of our historians. As a history of the abbey, priories, and other religious houses in Ireland, it is invaluable, notwithstanding some errors. These inaccuracies are, we have reason to believe, thoroughly corrected in the new edition, the first volume of which is on the eve of publication by Mr. Kelly, Grafton-street.

We will postpone until another occasion an extended notice of the work, confining our remarks to a short account of its author. Mervyn Archdall was born in this city on the 22nd of April, 1728, and passed through the University of Dublin with credit. He early imbibed a love for antiquities and literary research, and developed a taste for collecting coins, medals, and seals, which, by degrees, impelled him to more studiously investigate their belongings, and finally to resolve on collecting materials for a monastic history of Ireland. An acquaintance with Walter Harris, the editor of "Ware's Antiquities," and Charles Smith, the author of the "Histories of Cork, Waterford, and Kerry," and the celebrated Thomas Prior and others led him to more zealously pursue his design. Dr. Richard Pococke bestowed upon Archdall the living of Attanagh, which enabled the latter to devote more time to the preparation of his valuable work. About the year 1765, Archdall, by unwearied research and labours, had collected materials for about two volumes, which he determined upon publishing, but his best patrons and friends were dead, and he could prevail upon no one in this city at the time to enable him to give them to the world. The system of publishing by subscription—a system often adopted in the last century, though feasible to some extent, would not enable our author to give a large work such as he first intended to the public. The amount of subscriptions which he could obtain would not cover the cost of publication. There were no spirited publishers in Ireland then, nor learned bodies worth speaking of. After Archdall had amassed a very large number of records relating to our monastic institutions—the work of forty years of his life—he was obliged to abridge the whole, and print it in one quarto volume. Besides the "Monasticon Hibernicum," Archdall planned other works, some of which he finished, and others of which are still in MS. He made tours through the sister kingdoms, as well as through this country in search of materials for his great work and others contemplated.



M^r JAMES O'FERRALL'S PREMISES KILLS

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

In 1781 the Right Hon. William Conyngham, a lover of arts and antiquities, desired to form a society whereby the united labour of our antiquaries could be utilised in the service of their country, as well as in the illustration of a collection of valuable drawings then making by Mr. Conyngham at a considerable expense. About the same time Vallancy revived his "Collectanea de Rebus Hibernicis," the publication of which had lapsed for some years. He thus announced its revival:—"The editor is happy in informing the public that a number of gentlemen of learning and abilities have applied themselves to the study and illustration of the antiquities of this country, and their labours will be published forthwith under the title of this Collectanea." The following were the names of the members forming this new society, among which will be seen that of the subject of our notice:—Right Hon. William Conyngham, President; Charles O'Connor, Colonel Vallancy, Rev. Edward Ledwich, LL.B., Dr. Ellis, Rev. Mervyn Archdall, and William Beauford, A.M. This association, however, did not long hold together. Differences of opinion sprung up principally between Ledwich and Vallancy, and the partizans of the former; but though the society was dissolved, the "Collectanea" was carried on by Vallancy, with some assistance from Mr. O'Connor and others, up till July, 1790. The discontented antiquarian section who seceded from Vallancy reunited their labours for awhile, and, under the leadership of Ledwich, started the "Anthologia Hibernica" in January, 1793, which continued for two years. It was a creditable native magazine, considering the times, and despite the number of historical fallacies and antiquarian theories propounded by some of its chief writers.

In 1789 Archdall brought out an enlarged edition of "Lodge's Peerage of Ireland," from four to seven volumes octavo. In respect to this work, it is said Mr. Lodge had left many additions to his work in MS., but written in a cypher inexplicable by all the shorthand writers in Dublin. They were about being given up in despair, when Mrs. Archdall, a woman of considerable ingenuity, discovered the key, and thereby greatly enriched the edition. Respecting the ancestors of Archdall, it is stated that he was descended from John Archdall, of Norsomhall, in the County of Norfolk, who came to Ireland in the reign of Elizabeth, and settled at Castle Archdall, in the County of Fermanagh, prior to the year of 1602, on an estate that he purchased from Sir John Neale (or Neil). Archdall's only daughter was married to a clergyman, and her father resigned part of his preferment in the diocese of Ossory to his son-in-law. Soon after, our historian succeeded to the rectory of Slane, in the diocese of Meath, but he did not enjoy this preferment long, for he died on the 6th of August, 1791. Archdall's wife was a relation of Thomas Prior above mentioned. A monument to the memory of the latter true patriot may be seen in Christ Church, sculptured by Van Nost in 1756. Some of the modern restorers of our ancient churches might have consulted the volume of Archdall with advantage; others who have consulted it were not satisfied, because it did not agree with their views.

The engravings in the "Monasticon Hibernicum" are historically valuable, independent of the matter itself, the worth and

importance of which no historian can deny. A new edition of Archdall, with additions and corrections, has long been desirable, and we are glad to know—though nigh a century has passed over since its first publication—the reputation of the work has increased, and the respect for the memory of the author has not diminished.

THE VARTRY PIC-NIC CLUB.

ON Tuesday, the 23rd ult., the Lord Mayor, the Waterworks Committee, Sir John Gray, M.P., Maurice Brooks (Lord Mayor elect), Sir John Barrington, Mr. John Norwood, Aldermen Jameson, Campbell, McCann, Purdon, M'Swiney, Plunket, Redmond, O'Rourke, Durdin, and several other equally distinguished veterans in the public service, including a number of the efficient staff of the Corporation, proceeded to Bray, and from thence in carriages, to inspect the great Vartry Waterworks at Roundwood. Among the invited guests were the mayors of Kilkenny and Waterford. A *déjeuner* was, we are told, provided for the entire party at the Vartry Lodge. We understand the Government Auditor was too busy to attend, but that a deputy acted for him in taking notes of the proceedings. *Instar omnium.*

CIVIC LYRICS.—No. XLVI.

WASHING THE DIRTY LINEN.

There's linen to wash in the City Hall,
But the water is rather hard.
The clothes must be bleached, if washed at all,
And hung up in the Castle Yard
But what would the Viceroy say, had he seen
The linen hung out on a rope,
In the hope that a shower of rain might clean
What had never been touched with soap?

There's linen to wash, but the laundress says
That soap, soda, and starch, and blue
Will cost some halfpence, whoever pays,
And we know what she says is true.
But surely some friends on the Civic board
With dilemmas like these can cope;
'Tis hard indeed if no one will afford
Our poor Council a lump of soap!

There's linen to wash that needs a hard rub
To remove all the ingrained dirt;
But first let us hear "The Tale of a Tub"
Ere we sing "The Song of a Shirt."
In the city of Swift, sluggards in blood,
And in bone, and spirit, still grope;
They carry two faces under one hood,
And are always in want of soap.

There's linen to wash in the City Hall,
And on each of the Liffey's banks;
The Chairman has many a noble call,
But Sir Oracle gets all the "Thanks."
Oh! when will the great washing day arrive?
May it come very soon, we hope,
When the dirty in Council, skinned alive,
Will be washed out clean without soap!

CIVIS.

IRISH AND ENGLISH CHURCH BUILDING NEWS.

A fine memorial east window in Ahoghill parish church, as a memorial of the ministry of the Rev. Dr. Lee, formerly incumbent of the parish, was inaugurated a few days since.

Increased accommodation has been afforded in St. George's Church, in this city, by an alteration in the style, whereby the old family pews have become open seats. The fittings, which were all of Riga oak, have been used up in the alterations. Mr. George Tyrrell, Russell-place, was the contractor, and he has carried out the work satisfactorily.

The new Roman Catholic church of St. Colman, Dromore, was opened on Sunday last. It consists of nave, aisles, transepts, and side chapels. A tower rises at south-west angle to a height of 180 ft., and is surmounted by a gilt cross 10 ft. in height. The

material used for exterior of church is the blue stone of the neighbourhood, with dressings of Scotch stone.

The noted church of All Hallows, Breadstreet, London, wherein the author of "Paradise Lost" was baptised, is, we understand, to be removed shortly.

Sir Hedworth Williamson, of Whitburn, Durham, has laid the foundation of a new church at South Shields, to be dedicated to St. Mark.

The Countess of Dartmouth has laid the foundation stone of some infant schools at Slaithwaite.

At Newcastle-under-Lyme, the Bishop of Lichfield has laid the foundation stone of a new church.

The long-unfinished tower of St. Paul's, West-street, Brighton, is in course of completion, and, when finished, will add to the ornament of that noted watering-place.

Concerning St. Alban's Abbey, a circular has been issued by the Marchioness of Salisbury, the Countess of Essex, the Countess Cowper, and the Countess of Verulam, with a view to raise subscriptions for the "restoration" of that noble abbey, and towards the repair of the beautiful lady chapel at the east end of the church.

In reference to the proposed monument to the late Bishop Wilberforce, Mr. Melville Portal, writing to the Dean of Winchester, says that the general desire will not be satisfied unless the character of the intended monument is of the highest order, and equal to some well-known tombs which are the ornament of so many English and foreign cathedrals. It should not be inferior in design to that of Archbishop Grey, in York Cathedral, and that of St. Sebald, at Nuremberg; and the amount of subscriptions will, to a great extent, depend on the confidence of the public as to the character of the monument. With regard to the smaller diocesan or county memorial in the cathedral, Mr. M. Portal says that the most obvious wants are—1. The restoration of the east end of the choir to its original condition before the mutilation and spoliation by Cromwell. 2. The substitution of a more suitable screen at the east end of the nave. He suggests that Sir Gilbert Scott, or some architect of undoubted reputation, should give a more definite form to the proposal, in order that prompt measures may be taken to raise adequate funds.

THE NEW SEWAGE SCHEME FOR DUBLIN.

THE Main Drainage Committee of the Corporation, who have been for some time holding an inquest upon the corpse of their own scheme, or rather Messrs. Bazelgette and Neville's, are now engaged in "sitting upon" the prospectus of a new sewage scheme, the projectors of which propose to deal with the sewage on the principle patented by Dr. Anderson, of Coventry. Like other methods, it is described as simple and efficacious. The company who are to work this scheme say they are prepared to carry out the whole Main Drainage and Utilization at £350,000. We do not concur with the assertion of the projectors, who say that the patent is *being successfully applied in England at present*. Hereafter we will be prepared to give our opinion upon the subject. We are in favour of the utilization of the sewage of our city, and the purification of the Liffey, but we are not prepared to recommend any scheme until its working is fully explained, and sufficient credentials produced to shew that it has been already successful. We want facts and figures, names and places. If Dr. Anderson, or the company who are to work his patent, furnishes our citizens with these, we will give his scheme a fair examination; otherwise we will be inclined to send the project back to Coventry, where a good number of persons, as well as projects, have been hitherto sent that were "not wanted."

THE BRITISH ASSOCIATION.

THE opening of the Session of the British Association for the Advancement of Science took place this year in St. George's Hall, Bradford, on Wednesday, the 18th ult. The retiring president (Dr. Carpenter) vacated the chair in favour of his successor (Professor A. W. Williamson), who proceeded to read the inaugural address. The leading features of the discourse may be summarised in the following headings, which afford an index of the subject:—The Growth of Chemistry, the Meaning of Chemical Work, the Habit of Truthfulness, the Educational Advantages of Chemistry, the Advancement of Science, Scientific Education of Children, College Professorships, better Supply of Teachers, the Value of Teaching, Original Research, Scientific Knowledge and Manufactures, State Grants for Scientific Education, the Action of Government, the Expense of Scientific Education, and the practical conclusion.

Speaking of scientific knowledge and manufacture, the President said, "There is an urgent need of accurate scientific knowledge for the direction of manufacturing processes, and there could not be a greater mistake than to suppose that such knowledge need not go beyond the elementary truths of science. In every branch of manufacture improvements are made from time to time by the introduction of new or modified processes which had been discovered by means of investigations as arduous as those conducted for purely scientific purposes, and involving as great powers and accomplishments on the part of those who conduct them. Any manufacturer of the present day who does not make efficient arrangement for gradually perfecting and improving his processes ought to make at once enough money to retire; for so many are moving onwards in this and other countries that he would soon be left behind. It would be well worth while to establish such a system of scientific education for the sake of training men to the habits of mind which are required for the improvement of the manufacturing arts; and the expense of working the system would be repaid a hundred times over by the increase of wealth of the community. Summing up, the President observed:—"The practical conclusion is that it rests with those who represent the national desire for the advancement of science to take the only measures which can now be taken towards the establishment of a system of education worthy of this country, and adapted to the requirements of science. In the present stage of the business the first thing to be done is to arouse public attention by all practicable means to the importance of the want, and to get people gradually to agree to some definite and practicable plan of action. The best way to promote such agreement is to make people consider the natural forces which have to be systematised by legislation, with a view of enabling them to work freely for the desired purpose. When the conditions essential to any national system come to be duly appreciated by those interested in the cause of education, means will soon be found to carry out the necessary legislative enactments. If I have succeeded in convincing you that a national system of education is now necessary and possible, and in persuading you to do what you respectively can to prepare the way for it, I shall feel that the first step is made towards that great result."

The delivery of the address occupied two hours, and was frequently interrupted by applause. Mr. W. E. Forster, M.P. proposed a vote of thanks, which Professor Tyndall seconded, the former remarking, "so long as he had to do with the education of the country, he should hold to the principle that up to the time when children had to begin to earn their own living, we should not only teach them to read, write, and cipher, but impart to them all the knowledge they can

learn during that period, however limited it may be."

The real business of the session commenced on Thursday in the Geological Section. Professor Phillips, as President, dilated upon the geological characteristics of Bradford and surrounding districts. Over the Chemical Science Section, Professor Russell presided, and, in the course of his address, gave an interesting sketch of the life of the late Baron Liebig, and then passed on to describe the colouring matter in plants, particularly noticing that of madder, from which a dye from time immemorial has been obtained. Reports from committees were then read—"On the Chemical Constitutions and Optical Properties of Essential Oils;" "On the Method of making Gold Assays, and stating the results thereof." A Paper succeeded by Mr. J. H. Gladstone, "On Black Deposits on Metals." Over the Biological Section, which was divided into three sub-sections, Professor Allman presided. Over the Department of Zoology and Botany, Dr. Rutherford, for Anatomy and Physiology; and over that of Anthropology, Dr. Beddall, who enunciated the opinion that the long-headed remains found in barrows belonged to the Brigantes, and rejected the existence in Yorkshire of any descendants of Romans, and he gave interesting details of the apportionment in the existing population of Anglian and Scandinavian elements, in comparison of ancient skulls of living men. The address of Professor Allman discussed the doctrine of development, evolution, and reproduction. The Mechanical Section was presided over by W. H. Barlow. Mr. Barlow's paper directed attention specially to the new material which he termed "modern steel," but more popularly known by the name of "Bessemer," with which it is likely to be associated for some time yet, notwithstanding the more recent advances made in the production and treatment of steel by Sir J. Whitworth and others, both in this country and abroad. The paper also commented upon "modern steel" in its use and application for structural and engineering purposes. Applied extensively to rails and wheel tires, as ships' plates, lining for heavy guns, and other objects, there still existed, it appears, a difficulty in using it for engineering structures in this country. Numerous experiments had been made by the most competent men with regard to the physical properties of steel, and these, with the results attained, Mr. Barlow described at some length, the general conclusion being favourable to the employment of steel of a proper quality for structural purposes, as possessing all the toughness and malleability required in engineering structures. The means of testing whether a given sample of steel was of the quality suited for structural purposes was next pointed out. The strength of the material is readily ascertained, and presents no difficulty. The main question, therefore, turned upon "ductility," or resistance to fractures by blows or sudden strain, and the "test by impact," Mr. Barlow thought, was a good one for detecting brittleness, in the case of rails for example. He also mentioned the remarkable fact that, in consequence of the uncertainty of the quality of steel bought in the market, one of the large railway companies had established works to make their own steel, and that a similar step was contemplated by one of the principal constructive departments of the government. In fact, the question was in such a state at this time that not only was a large and useful field for the employment of steel practically closed, but the progress of improvement in engineering structures was impeded both in this country and in other parts of the world where English engineers are engaged. Papers were read in the same section by Mr. Newton, on Tilghman's sand blast process for cutting hard substances; and by Professor Osborne Reynolds, on the resistance of the screw propeller as affected by immersion; and on the friction of shot as affected by different kinds of rifling, which went to show that the ordinary plain groove is better than

the parabolic groove, inasmuch as it wastes less powder, gives greater velocity, and by diminishing the friction diminishes the wear and tear of the rifle by at least one-half.

In the Section for Mathematical and Physical Science Professor H. J. S. Smith presided, and his opening address ranged over a very wide field indeed. Immediately on its conclusion, however, the company, which at no time was numerous, cleared out, and no more than a score of persons remained to hear the papers which followed, including a report on inverse wave lengths; Dr. Huggins, on the Spectra of the Nebulae, and Professor Birt anent systematic observations on the moon's surface.

In the Geographical Section, an address was delivered by Sir Rutherford Alcock, on "Geographical Explorations and Progress," and a paper was also read by Sir Frederick Goldsmid, giving "Notes on Recent Journeys in Persia, and another by Major St. John on the subject of "Trade in Persia."

In the Economic Science and Statistics Section, presided over by Rt. Hon. E. Forster, a paper was read by Mr. Hyde Clarke on "The Influence of Large Centres of Population on Intellectual Manifestations;" "The Purchase of Railways by the State;" and "Railway Amalgamation," was discussed in a paper being read by Mr. R. Haughton, who suggested the amalgamation of railways of this country into four groups.

On Friday, among the papers read was, "On the Localisation of the Functions of the Brain," by Professor Ferrier. A paper by Mr. J. S. Phené on "Works of Art and Architecture of the Pre-Historic Ages." A paper by Mr. J. R. Napier, in which he referred to pressure loss. In the same section Mr. Webster advocated the assimilation of the patent systems of this country and the United States. In the Mathematical and Physical Science Section, Professor Ball exhibited and described the dynamometer. Professor Forbes expatiated on irradiation, and on certain connections between the molecular properties of metals; and Professor Zenger on the "Correlation between Specific Weights and Specific Heat of Chemical Elements, and on the Action of Symmetrical Conductors and Lightning Conductors." Other cognate papers followed.

On Saturday Mr. W. E. Forster, M.P., delivered his address "On Science and Politics," as President of the Economic Science and Statistics Section. This address properly belonged to the opening of the Section on the preceding Thursday. Two papers were read on the subject of "Endowments"—one by Dr. L. E. Appleton on "Some of the Economical Aspects of Endowments of Research," and the other on the "Economic Use of Endowments."

In the Geographical Section, a paper was read on "Recent Arctic Expeditions," by Mr. C. R. Markham, C.B. A discussion followed, winding up with notices of fauna, flora, and other natural products of the Arctic countries. A paper in "Advocacy of Overland Communication between India and China," was read by Dr. McCosh, and another by Major Beresford Lovett in relation to Persia.

On Monday, in the Mathematical and Physical Science Section, Professor Everett presented the reports of the committees on "Underground Temperature," and on "The Tides." In connection with the latter report, a tidal clock, and a very ingenious mechanical contrivance for predicting the height of the tides, were exhibited.

A report by Mr. G. F. Symons on the "Rainfall of 1872," showed that the rainfall of that year had, over the three kingdoms, been greater than any recorded during the last century and a-half.

Dr. Carpenter read a paper on "Results of Experiments recently made on the undercurrents of the Dardanelles and the Bosphorus." These experiments, he contended, were confirmatory of a theory that the great drainage of fresh water into the Black Sea at once caused and was counterbalanced by an undercurrent through the Dardanelles.

Most of the other papers read in the section were technical in character.

In Section B, Chemical Science, there was a large attendance to listen to Mr. J. Norman Lockyer's "Note on the Elements in the Sun," which embodied the results of the most recent spectroscopic investigations, and the reading of which was followed by a long discussion, in which Dr. J. H. Gladstone, Mr. Dewar, Mr. Huggins, Dr. Siemens, and others took part.

Mr. R. B. Grantham, C.E., chairman of the Committee on Sewage, read the report of that committee, to which some very important conclusions were appended. These conclusions were generally to the effect that all conservancy places, including midden, heap, and cesspool systems, dry ash and dry earth closets, pail closets, &c., are quite incompetent as solutions of the general questions concerning the removal of the refuse matters of a population, because the manure produced will not bear the expense of carriage for more than a very short distance, while the process is from a sanitary point of view very incomplete. The water-carriage system, on the other hand, is based upon a sound principle, that of removing the refuse matters at once, and in the cheapest possible manner, by gravitation. By properly conducted sewage irrigation a solution is afforded to the question of sewage utilization. It is certain that all kinds of crops may be grown with sewage, perfectly suited for the food of both man and beast. All the evidence collected by the committee is against the assumption that enteric disease would be propagated by irrigation. After a discussion it was resolved to recommend the reappointment of the committee.

A paper by Mr. McGowell, Town Clerk of Bradford, was read, on the subject of "The Bradford Sewage System," and the section adjourned to inspect the Bradford sewage works.

In Section E, Geography, the President (Sir Rutherford Alcock) stated that he had received a letter from Sir Samuel Baker—and he was sorry to say that he could not be present. He, however, gave information which they would be glad to hear.

A paper by Signor Guido Cora on Sir Samuel Baker's recent account of the connection of Lakes Tanganyika and Albert Nyanza was read by Mr. C. R. Markham, C.B.

An interesting communication was read from Lieut. Cameron, R.N., the commander of the Livingstone East African Aid Expedition, giving an account of the progress of the expedition, and of its adventures in the interior.

In Section F, Economic Science and Statistics, the report of the Metric Committee was read by Professor L. Levi, who observed that the importance of such uniformity to science, commerce, and international intercourse, was everywhere appreciated. But adverse circumstances had damped that impetus which a long continuance of peace had imparted to the object. The system abroad was making rapid strides. The objection to such a system was the necessity it would cause of a complete recoinage; the basis was solid enough, but the building of the superstructure would be attended with difficulty. The committee were convinced, however, that the ascertainment of a well chosen system of international weights, measures, and coins well deserved the attention of men of science, and that since both the coinage, weights and measures of the realm were affected by considerations not only economic, but chemical and mechanical of great delicacy, it was all important that a committee of the Association should continue to watch and guide the progress of the measure, and for that purpose recommend the reappointment of the committee for the next year. A brief discussion ensued.

Previous to the adoption of the report, the Right Hon. W. E. Forster, M.P., the president, did not deny the great importance of the question, both as regarded weights and measures and coins. Individually he

should be exceedingly glad if they could jump from their present system to the metric system. Here was a broad illustration of the weights and measures in their own trade, which all Bradford people would be aware of, the exceeding difficulty of the measure in wool. They bought in the country in one measure, had their invoices made out in a second, and entered the same in their own books, for their own convenience, in a third. With regard to what had been said about making the system compulsory, he believed that was eminently a question in which they could not go before the wishes and desires of the people. They might to some extent lead, but they could not drive them, and to attempt to force them to be used would almost certainly lead to failure. The report was then adopted. Several other papers of general interest were read in the section.

In the sections of Geology, Biology, and Mechanical Science, no business of public interest was transacted.

At a meeting of the general committee held this afternoon, it was resolved that the meeting for 1875 be held at Bristol, and Professor Tyndall was elected President for 1874, to be held at Belfast.

In the evening, Professor Clark Maxwell delivered a discourse on molecules to the members and associates in St. George's Hall.

On Tuesday the only two sections in which business of much public interest was transacted were those of Economic Science and Geography. In the first-named Mrs. King read her paper on "Confederated Homes and Co-operative Housekeeping," to the largest audience that has yet assembled in the section, including a very large proportion of Lady Associates. Mrs. King, who read her paper in a very clear and distinct voice, dwelt in the first place on some notorious defects and shortcomings in the English home life, more especially with regard to the relations between domestic servants and their employers. These evils she attributed to the want of any system of education for domestic duties on the part of either mistress or servants, and to the growing sense of the degradation of their position felt by the latter. As a remedy she suggested the establishment of confederated homes, the residence of several families in one building, in which all possible appliances of labour-saving machinery should be employed, combined with a system of co-operative housekeeping, joint employment of servants, and so forth. The advantages that would result from this plan, Mrs. King contended, would be greater economy, greater comfort, and better nursing, training, and education of children; the opening of a sphere of honourable employment to women of all conditions; the establishment of institutions for giving education in domestic work, and greater sociality and more real comfort at home. Mr. De Meschines provoked some laughter by declaring that the class of domestic servants were better off than any other in England. They were well cared-for, well paid, well fed, and he knew no higher blessings. Miss Becker characterised the paper as most important. The object of the scheme of which it was the explanation was to relieve overworked women from domestic drudgery, and to provide overworked men with the comfort of well-conducted homes. There was no doubt that, by means of proper combination, a great deal of domestic drudgery might be spared; and the principle of the division of labour was not sufficiently applied. Speaking of its being expected that women should make by hand the clothes of the family, that appeared to her the most uneconomical employment of labour, and she hoped, among the schemes for the improvement of the household, it would be thought desirable that the clothes should be cut out by some competent person, and made in factories. The President, in bringing the discussion to a close, spoke warmly of the ability shown in the paper, and the value of many of the suggestions contained in it.

The reading of a paper by Major-General

Synge on "Purity and Impurity in the Use and Abuse of Water," and of one by Mr. Botley of London, on "Dwellings for the Industrial Classes," closed the business of the section.

In Section E, Geography, the most important paper was read by Commander Davis, R.N., on "The Scientific Voyage of the Challenger." Considerable discussion followed the reading of this paper. There was a soiree at the Mechanics' Institution and a ball at St. George's Hall this evening.

On Wednesday (last) the business proceedings of the British Association were brought to a conclusion at Bradford. Only two sections sat.

In the Mathematical and Physical Science department, an important paper was read, which had been prepared by Mr. C. Meldrum, on "The Periodicity of Cyclones and Rainfall, with Sun Spot Periodicity." The paper gave an account of some experiments at the Mauritius, and the results of these experiments had established the fact that the greater cyclones occurred in the years of maximum sun spots. Several other papers of little interest were read, one being "On Lunar Influence on Clouds and Rain," by Mr. J. Park Harrison.

In the Geographical Section Dr. Bryce read the report of the committee appointed to inquire into the occurrence of earthquakes in Scotland in August and April last. The report gave an account of the effect of the phenomena, stating that the successive phases of the earthquake were a noise like thunder, then a shaking and a rattling of objects, and a wave-like motion of the ground. The extent of country affected was considerable, the limits being marked by Stirling and Blair Logie on the south-east, and St. Fillan's at Lochearn and Glen Lednoch on the north-west.

Professor J. Tennant read a paper on Diamonds, special references being made to the recent discoveries in South Africa.

An account of the Wess and Salt Basins in Northern China was given by Baron Von Richtofen, who had travelled in that country from 1868 to 1872.

In the afternoon a meeting of the general committee of the Association was held; Professor Williamson in the chair. Grants of money for scientific purposes, amounting in the aggregate to £1,495, were made. The chief of the new items were £100 to the Mauritius Observatory and £25 for an inquiry into the economic effect of trades unions. The Committee of Recommendations had passed resolutions asking the council to urge upon Government the importance of meteorological researches at Mauritius, and of the scientific results to be obtained from Arctic explorations.

At the concluding meeting of the members and associates which followed, the usual votes of thanks were passed. The opinion was expressed that the accommodation and the general reception which the Association had met with at Bradford had never been surpassed. The total number of members and associates was 1,988.

In the evening a concert was given in St. George's Hall, Sir Jules Benedict being the conductor, and Miss E. Wynne and Mr. Santley being among the vocalists.

It was resolved that next year's meeting should be held at Belfast under the Presidency of Professor Tyndall, and in 1875 the Association will visit Bristol. Summing up, it may be said on the whole this year's meeting was productive of a good many useful papers in all the sections, and that they mutually help to carry out the object of the Association, which is the advancement of Science.

AN ARCHITECTURAL DISCOVERY.—The demolition of one of the canon's residences attached to Norwich Cathedral has exposed to view the remains of the Norman refectory of the Benedictine Convent, discovering many features of great interest to archaeologists, which will, no doubt, be inspected with eagerness by those of the visitors of the Social Science Congress learned in such matters.

ASPHALT: ITS NATURE AND USES.*

(Continued from page 253.)

ASPHALT minerals, according to analysis and origin, are no other than oxydised petroleum or naphtha compounds. Their dispersion is hence analogous to that of petroleum; indeed, they are identical therewith, and are only distinct from this carbo-hydrate from their having subsequently absorbed a certain amount of nitrogen. That coal is also formed of carbon, hydrogen and oxygen, by no means entitles it to rank in this series of bitumina; for on the one hand it contains, like the plants from whence it arose, a proportion of nitrogen, and on the other, its oxygen has not been taken up in consequence of oxydation, but is only the remains of a greater mass of oxygen which existed in the organic flora, and has only partially disappeared in the form of carbonic acid and water, during the long subterranean carbonisation of the vegetable mass. For the cardinal distinction between coal and the asphalt is, that the chief mass of coal is insoluble in all media, especially in either solutions; whereas the whole mass of all asphalt matter, in so far as it does not consist of stone mixed up with it, is entirely soluble in either solutions. The series of bitumina and bituminous stones, as given below, is hence perfectly intelligible. We have only to remark that the paraffin-like and crystallised carbo-hydrates belonging to the same natural family are omitted in consequence of their very slight dispersion, and are not specified, as it was only necessary to set forth the great natural products in their series. Nor is it necessary to enter upon the large field of petroleum.

The unmixed bitumina may be given in the following natural order:—

1. Rock oil or naphtha.
2. Earth oil or petroleum.
3. Rock tar or malth.
4. Earth pitch or asphalt.

Naphtha, formerly the rock oil of the apothecaries, is manifestly the source of all the rest. It is found in small quantities in almost all, and is the first to be separated by distillation; it flows from the earth in a pure state at but few places on the earth, and the classical neighbourhood of the Caspian Sea is the only district to be named. From its great volatility and the warmth of the earth's crust, it forces its way up through the rock in which it exists by distillation, and condenses again in other porous stones or in the mountain clefts, whence it flows in a pure state, or mixed with water. It was long believed to be a product of the distillation of coal at a great depth, but gradually, and especially since the discovery of the oil wells under the coal measures in America, a conviction has ensued that it is rather the distilled product of organic life, particularly animal, life, spread in minute quantities in the rock, the only monuments of the flesh of innumerable generations of animals of the most diverse description.

As soon as it has been in contact with the air for any time it becomes greatly changed. It assumes a brown colour with a greenish tint, it grows thicker, obtains a higher specific gravity, and yields at low boiling temperatures only a slight distillation, a greater quantity of carbo-hydrates only at higher temperatures, in consequence of molecular condensation, and leaves behind a residuum, sluggishly fluid and of a tarry nature, containing a certain quantity of finely divided earthy matter. It is unnecessary to state all the sources of petroleum here; they are sufficiently well known, in consequence of the mercantile importance of the article. We shall therefore merely name the places in Germany where it is found. These are:—

(a.) Tegern See (Lake Tegern), in Bavaria (Quirinus oil).

(b.) Bechelbronn, in Alsace (Hanau earth balsam).

(c.) Eiterfeld, near Fulda in Hessen (recently discovered).

(d.) Reichartshausen, near Darmstadt (recently discovered).

(e.) Peine, Verden, Edemissen, Oedesse, Hanigsen, Wieze, Steinforde, and Brunswick, where it is partly gathered from standing waters and sunk wells, and leads us to hope for still greater results.

(f.) Holle, near Heide, in Ditmarchen, where at a slight depth a huge chalk formation, as full of petroleum as a sponge, containing 250 million cwt. of petroleum in the very small area yet explored, have been found.

Longer exposure to the air continues the metamorphosis, and the petroleum is changed into rock tar; indeed it is difficult to say where the line of distinction between these two liquids is to drawn. The degree of viscosity observed in Swedish tar establishes its character as properly such, but the boundary line is quite arbitrary. Wherever petroleum exudes from the earth, and especially in places where it has been found from antiquity, rock tar is also found, for the oxydation of the oil by the air continues with regularity, and almost all petroleum sources and wells have been discovered by the presence of rock tar near the surface.

As a rule, almost without conception, the sandy strata are permeated by rock tar, and natural basins whence this matter freely exudes are very unusual. One region where earth oil is very common is in the volcanic district of Clermont-Ferrand, France; it is not only found in combination with the general mass, but in an actual spring, the Fontaine de Poix. Above the enormous petroleum centre of Holle, near Heide, close to the surface, there is a bed of soft diluvial sand, 20 ft. thick, entirely full of rock oil easily dug out with spades.

In the Hanoverian petroleum wells, from the sandy nature of the Luneburg-Heide soil, a portion of the sand is almost everywhere thick with tar. In Alsace, at Schwabweiler, and Bechelbronn and some neighbouring communes, a part of the tertiary sandstone is steeped in the substance in like manner. At Seyssel, in the Department de l'Ain, the tertiary sandstone is bituminous by rock tar; and at Bastennes, in the Department des Landes, a region closely resembling that of the Luneburg-Heide, the sand has become bituminous, and for many years much rock tar was obtained there, and exported by way of Bayonne, until a falling off in the bituminous rock put a stop to it.

Pure rock tar is obtained from all these sandy masses by washing or boiling with water, causing the sandy particles to subside, the oil floating on the top. The rude matter is then heated again to evaporate the water contained in it, and separate any further particles of sand. According to its density, the rock tar is then either heated in open boilers for a certain time to drive out the volatile oil, or distilled in retorts in order to win it, and the result is then a specially dense brilliant black pitch superior to every other kind of pitch. Although this may be called an artificial product, from the process of evaporation to which it has been subjected, it is in fact the very substance known as viscous earth pitch, or viscous asphalt. In the manufacture of asphalt this product, under the name of *goudron minéral*, forms the best basis of value, and the fused material for the liquidation of the ordinary rock asphalt in the form of mastic.

But the rock asphalt, to a description of which the following pages are devoted, is really only a limestone, inspissated, like the sand, by rock tar. Its constitution differs slightly from that of the sand rock tar, its viscosity being greater. But this is probably only apparent. Such an intimate blend is very usually found naturally produced. The limestone of the new conformation at the Val de Travers is the best instance of this. The next quality may be found in the rock asphalt of Pymont, near Sysse, on the Rhone, and in the neighbouring places, Volant and Charoche, whence it is procured by mining.

All these are limestone of the upper or white Jura formation. Both of these we shall very fully describe. Next to this comes the bituminous limestone of the Alpine lias, found near Seefeld, in the Tyrol, in many quarries, and the tertiary sweet water limestone of Lobsan, in Alsace, where mining is resorted to. Then follows the yellow-white Jura limestone of the island of Brazza, Dalmatia, the dolomitic banks of which, for a thickness of 12 ft. contain 7 to 8 per cent. of bitumen, and hence are quarried out.

A veritable asphalt limestone is found at Limmer in the pterocera strata of Kimmeridge Jura, close to the city of Hanover, and it is also important that a few years ago a similar rock asphalt was found in Brunswick-at-Holzen, in the Hilsgebirge, to the east of Eschershausen, and now known in commerce as the Vorwohle asphalt, from the name of the nearest railway station. This also comprises a Jura limestone stratum of the upper series, somewhat more recent than at Limmer, and belonging to the so-called Portland strata.

But the largest source of this kind is the before-mentioned bituminous chalk limestone rock at Holle bei Heide in Ditmarschen. The bitumen, however, here, although as intimately combined with the limestone as in the classical regions of its great abundance, according to the results obtained by the Paris Compagnie Générale des Asphaltes, contains too much pure petroleum for immediate use, in consequence of its lying so much further beneath the surface, there being 120 ft. of diluvium above it. It is for the future to teach us when the stone, on being raised to the surface, may lose, by exposure to the atmosphere and oxydation, some part of its petroleum, and thus yield perfect asphalt limestone; whether more rock tar and less petroleum will present itself, or whether the tar contained in it can be concentrated during manufacture on some part while the oil is removed. In case of this being so, this single source would be sufficient to furnish all the great cities of Germany with asphalt roadways. The chemical constitution of asphalt, &c., shows that it would be possible to extract a part of the yet un-oxydised carbo-hydrates. By different modes of solution, or different temperatures, asphalt, rock tar, and the allied bitumina are converted into other forms, very variable in their nature. Individual analysis in this direction is only specific, and only generic by its qualitative nature. Boussingault, who possessed some land near Bechelbronn, especially busied himself with the chemical nature of these substances.

All carbo-hydrates, described as petroleum and naphtha, are given off at about 200 degrees Celsius; from 200 degrees to 250 degrees Celsius an oil is developed—the last liquid form of rock tar—called by Boussingault petrole. After it has been kept for days at a temperature of 250 degrees without any apparent diminution of weight, a substance remains, heavier than water, easily breaking at a low temperature, and called asphaltine—that portion of the bitumen insoluble in ether, and only soluble in turpentine and similar solvents. Petroleum has also been divided into light coloured and dark coloured, the first of which is soluble in pure alcohol, but the latter is not. The last might be properly called malthene, to preserve the parallelism of the terminology. For technical purposes a mineral oil, or earth-pitch, would never be named after this analytical method of chemistry, for in the important properties of viscosity and relative degrees of fusibility, it will constantly be necessary rather to fix these points by direct technical observation than by the somewhat treacherous indications of them furnished during chemical analysis.

The mineralogists may be considered to find their asphalt in mineral tar, and the mixtures of mineral tar with stones of various kinds. But this also comprises several substances within itself, some of which are hard and brittle, and some soft and viscid, some again absolutely free from any foreign mix-

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.

tures, and others drenched with early particles. It is found in the purest condition in small cavities of old stones, in druses and crystallised holes, whither it has shed itself drop by drop, or reached by evaporation; somewhat less pure in clefts of stratified rocks, as in the chalk near Münster, and in actual ore formations, where it partially protects the crystals by a rim.

(To be continued.)

THE ROYAL DUBLIN SOCIETY'S SCHOOL OF ART.

THE following students were successful at the Second Grade Examination, held by the Department of Science and Art, during the year 1873:—

Prizes—John Cox, Andelusia Evans, B. Fitzgerald, J. A. Hull, J. Kavanagh, M. T. H. Moran, E. D. O'Brien, W. T. Parks, Mary H. G. Warren, Frances T. White, George Yeates.

Full Certificates—M. T. H. Moran, R. D. O'Brien, Mary H. G. Warren, George Yeates, J. W. Boucher, Zoe Elliott, Panella K. Symes.

The following students passed in one or more subjects:—G. Allen, H. Allen, C. Barnes, T. Beale, B. Birch, D. Bradley, H. Bradley, A. Brown, C. Calcutt, A. Christian, G. Coffey, D. A. Crofton, T. S. Cruise, B. E. Day, T. Doherty, T. A. Douglas, A. H. Downes, L. M. A. Deane, J. Ellis, A. Ffolliott, H. J. Hamilton, J. Johnston, B. P. Jones, J. G. Jones, P. Kavanagh, J. Kennan, J. J. Kirkwood, M. A. Lees, G. B. LeFanu, W. Long, A. M'Donnell, W. H. M'Kenzie, William Kavanagh, A. Maguire, M. Canning, J. Martin, B. Millard, L. Montgomery, T. P. Mallins, N. T. Nangle, P. O'Brien, M. O'Callaghan, T. O'Cleary, A. Palmer, H. M. J. Redmond, G. Shaw, E. Spearing, W. G. Spong, P. A. Symes, P. Troy, M. L. C. Walker, A. T. White, H. G. Williams, E. Worthington.

BLACKROCK.

At a meeting of the Township Commissioners, a letter was read from Mr. Williamson, law agent of the board, specifying the terms of a loan of £3,000 which the Commissioners proposed to raise under the Public Works (Ireland) Act, for the construction of a people's park within the township. The terms of the letter were approved of. After considering the formal reports of the sanitary committee, of the finance committee, and of the township surveyor, a motion was handed in by Mr. Smith, and was after some conversation adopted, for the appointment of a committee to consider and report upon how best the object should be most effectually attained of in future having the law costs largely reduced, inasmuch as, in the terms of the resolution, "the expenditure for law costs in relation to the affairs of the township for the past year was very large in proportion to the income of the township." Mr. Ormsby remarked that the best way to avoid the law costs of which Mr. Smith complained would be to manage their business with common sense, and not by law.

A GAS FRAUD AND A GROSS FRAUD.

THE correspondence which we print below will almost explain itself. If the statements be true, or near the truth, a rigid inquiry should long since have been made. It is too bad that our citizens, besides having to pay for inferior gas, should be robbed into the bargain in the supply. The overflow pipe in the meter being left a degree higher than necessary, would have the effect of elevating the water line, and so the result stated would be produced. A manipulation of this kind would certainly be nothing short of a gross fraud. Mr. Kirby's statement is entitled to the serious attention of the consumers, no matter what gas directors may be in office—old, new, or hybrid:—

Dublin, 41 Cuffe-street,
1st January, 1873.

SIR,—Permit me to bring under the notice of the Lord Mayor and members of the Corporation, the erroneous state of the gas meters at present in use in Dublin and its suburbs, the examination of which, by an independent competent gas engineer, has been, for this time past, badly wanted; and also to

state my positive belief that any figures shewing the amounts of money received by the Gas Company for the sale of gas during the past years would be less by one-seventh of the entire amounts if the gas meters registered correctly the quantity of gas used by the consumers.—I am, sir, your obedient servant,
JAMES KIRBY.

William J. Henry, Esq., Town Clerk.

Dublin, 41 Cuffe-street,
12th September, 1873.

SIR,—I respectfully object to the Dublin Alliance and Consumers' Gas Company being empowered under the provisional order of the Board of Trade to make any change in the illuminating power of the gas supplied by them for the public and private lighting of the City of Dublin and its surrounding townships, until the gas meters supplied by them to private consumers in the City of Dublin and its suburbs are examined by a competent gas meter tester entirely independent of any local body. On 1st January, 1873, I addressed a letter to the Town Clerk of this city (a copy of which I enclose) impeaching the accuracy of the gas measures in use here, and on the 8th of same month that letter was published in the *Saunders's News-Letter* and *Daily Advertiser*, and no attempt has been made up to the present time at giving a denial to that public impeachment by any person whatsoever. I shall feel most happy in answering any inquiries you may deem necessary to make on the subject, and am, sir, your obedient servant,
JAMES KIRBY.

William Rowe Malcolm, Esq.,
Assistant Secretary (Railway Department),
Board of Trade.

Board of Trade, (Railway Department),
London, S.W., 22nd September, 1873.

SIR,—With reference to the application of the Alliance and Dublin Consumers' Gas Company for a Provisional Order under the Gas and Water Works Facilities Act (1870) Amendment Act, 1873, I am directed by the Board of Trade to inform you that, having considered the application, and the objections thereto, which have been lodged with them, they are of opinion that they ought not to entertain an application made by directors who are stated to have resigned their offices in consequence of charges of mismanagement, pending a general meeting at which their resignation may be accepted, and other directors may be appointed by the shareholders. Under these circumstances, the Board of Trade, as at present advised, have determined that they cannot allow this application to be proceeded with, at any rate for the present.—I am, sir, your most obedient servant,
THOMAS GRAY.
James Kirby, Esq., 41 Cuffe-street, Dublin.

HOME AND FOREIGN NOTES.

RAILWAY TO BALTINGLASS.—A meeting of gentlemen connected with the Counties of Dublin, Wicklow, and Kildare, was held on Thursday last to consider the advisability of constructing a branch line of railway from the Great Southern and Western line at Inchicore to Baltinglass, a distance of about twenty-six miles. It was resolved that the necessary steps should be taken for application to Parliament next session.

"ONE OF THE OLDEN TIME."—William Ewart, Esq., senior head of the firm of William Ewart and Son, died at his residence, Sydenham-park, Belfast, on the 22nd ult. In 1820 he commenced the muslin trade in Donegall-street, and in 1847 erected a large spinning mill on the Crumlin-road. Shortly afterwards he undertook extensive bleaching works at Glenbank, which had been held by the late Mr. Mackay, and afterwards opened the large warehouse in Donegall-place. His son, William Ewart, J.P., is now the head of the firm.

A NOVEL STRIKE.—A most extraordinary strike was terminated at Consett. The Consett Iron Company are building a number of new houses near the Saint Pit, and the miners of that colliery, on finding one of them occupied on Monday morning by a joiner, at once turned out and refused to resume work until they received an assurance that the joiner would give up possession. The men held a meeting on Tuesday night, and on the masters promising to remove the obnoxious tenant, work was resumed.

PRESENTATION.—We understand that Alderman O'Rourke, T.C., Dalkey, has been presented with a piece of plate for his exertions in preventing certain sewage being disembogued at Dalkey.

It is proposed to erect a Masonic Hall in Armagh. A provisional committee has been appointed, and it is expected that the matter will be taken up spiritedly by the brethren of the district.

The following appears in the *Cork Daily Herald* of Monday:—"The Dublin Corporation are agitating the question of purchasing the gas works in that city. A number of the Corporators are individually in for a heavy bill of costs incident to last year's abortive attempt to get those works, and this they will have to pay unless they get the contemplated Act of Parliament. It is an index to the way things are worked in that body that the requisition for this new move is signed by a member of the Corporation, who, year after year, goes to London as their junior counsel in all those parliamentary jobs."

The Glasgow Sewage Committee have reported to the Town Council that, after all their experiments, they cannot recommend any plan for the purification of the Clyde, so they suggest that a Royal Commission should be applied for in order to obtain the evidence of some eminent authorities.

The Leeds Corporation, having tested wood pavements, are about to lay them down in several important thoroughfares, and especially near the Leeds County Court, whose proceedings have thus far been inconvenienced by the noise of vehicles passing over the stone pavements near.

Thomas Marshall, fishmonger, charged at the Brentford Sessions on Friday with exposing 101 mackerel for sale in an unfit state for human food, was fined 40s. and the magistrate told him that he was liable to a penalty of £2,020.

GIFT OF PUBLIC GARDENS AND MUSEUMS.—Last week the public gardens, purchased and beautified by the late Mr. Julius Brenchley, of Milgate-park, Maidstone, and the museum containing his magnificent collection of birds, shells, ivories, bronzes, &c., together costing upwards of £20,000, were thrown open to the public amidst great rejoicing. The streets were decked with flags, and at night the approaches to the museum and gardens were brilliantly illuminated. The pleasure grounds, which cover an area of six or seven acres, have been laid out with flower beds, gravelled walks, and lawns, under the direction of Mr. A. M'Kenzie, late landscape gardener to the Metropolitan Board of Works, and designer of the Alexandra Palace grounds. The collections within the building are displayed in ebonised cases. At half-past two in the afternoon the mayor and corporation walked in procession from the Town Hall to the gardens, and declared them open. It is much to be regretted that the munificent donor did not live to see the completion of a work in which he had taken so great interest. Mr. Brenchley died at Folkestone in February, and was buried in the family vault at the Parish Church of All Saints, Maidstone. He had travelled in most of the countries of the world, and many of the objects contained in the museum were collected by him in the course of his journeying. Shortly before his death he published a work entitled "Jottings during a Cruise of her Majesty's Ship Curacao among the South Sea Islands in 1865."

TO CORRESPONDENTS.

THE THREE COMMITTEES.—We are unable to say which of the three committees of our Corporation do the most work, from the fact that we have failed to discover when any of them performed any work. The Main Drainage Committee are "considering" at present what can be made out of a certain scheme. We are not sure that the Committee, as a whole, will make much out of it, but one or two individuals certainly will.

THE OLD "SPAS" AND MINERAL WELLS.—Nearly all the old wells that existed in Dublin are either dried up or covered over by the modern growth of the city. In the last century they were plentiful on the south of the Liffey, and many were the virtues and healing properties attributed to some of these old wells. It is our intention at an early date to give some particulars concerning the more remarkable of them.

LEITRIM COAL.—There is reason to hope that the Leitrim Coal Fields will soon be profitably worked. We would direct our readers' attention to the memoir "On the Leitrim Coal," by Mr. J. A. Readwin, F.G.S., M.R.I.A., printed by A. Ireland and Co., Manchester. We have lately dealt with the Peat Question from an industrial point of view. The Leitrim Coal and Antrim Iron-Ore industry certainly claims attention also, and we hope it will receive it from others in the island besides ourselves. We will not lose sight of the subject.

"KILLESTER QUARRIES."—The quarries worked here originally are long since closed up. The material was calc. or the ordinary black building stone of Dublin. "The Black Quarries" was the name they were formerly known by, and the stone was somewhat similar to that obtained at Finglas.

ART (South Kensington).—Our obliging correspondent is thanked for his suggestion. Concerning the competition mentioned, will he be so kind as to state the time, name, and place.

ORMOWDE (Kilkenny).—See Society's Journal. The name may be right, but it is possibly a mistake.

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Some magazines and correspondence to hand will be noticed in our next issue. Matters intended for notice or publication should be sent two or three days before each date of issue.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.
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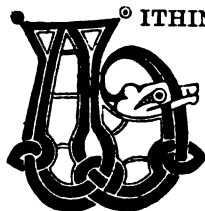
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The Irish Builder.

VOL. XIV.—No. 332.

Technical Education in Dublin.



WITHIN the last dozen of years at least, increased facilities exist in this city for enabling our artizans in various branches of trade to improve and increase their knowledge, and, as a natural sequence, improve their handiwork. We regret to say that these facilities have been availed of to a very limited extent, when we consider the number of our young workmen and apprentices. If we are not mistaken, the class of students who take advantage of the Royal Dublin Society's School of Art form but a very small portion of the body of *bona fide* artizans or intended artizans. Again, there is the Royal College of Science in Stephen's-green, which affords fair facilities also for acquiring practical and technical instruction for workmen as well as others intent on elevating themselves, and possessed of that foresight that should never desert them. If workmen in their youth will neglect their opportunities, their hopes as to the future must be always vain and ending in barrenness. There is no royal road to learning without study, without some sacrifice—in a word, without toil. The labour of the brain must accompany the labour of the hands, and hands and brain must work in loving unison where science and art are pursued for either fame or profit. We are interested in the educational and social advancement of all classes of workmen without distinction, but more particularly so in the cases of those connected with the building and cognate branches. We wish to see our building and engineering workshops filled with competent foremen and competent journeymen—men who can shew a reason for every application of the tools they handle, and can explain the principles of their trade with the same facility as they can explain the names of their tools and the uses to which they are put. The rule-of-thumb is the rule of ignorance and doubt—a rule of wasted time and wasted material; and architects, engineers, and builders, as well as workmen, are to blame for its still standard existence in our workshops. The art of drawing is only second to the art of writing, and no apprentice to the building or kindred branches should be allowed to pass through his servitude without acquiring a decent knowledge of architectural and mechanical drawing. The young carpenter or joiner who makes a sash, a framed soffit, a door, or who puts up a staircase, or who glues together a column or capital, ought also to know how to draw these pieces of workmanship, and, if needs be, put them in perspective. Every bench or building hand as well as foreman should be able to read an architect's plan with facility, and work from it; but it is a fact beyond denial that scores of our *soi disant* foremen are as ignorant in these matters as the workmen whom they are supposed to superintend. A knowledge of geometry and drawing is absolutely indispensable to all building and engineering work-

men, to workers in metal, as well as to workers in plaster, brick, stone, clays, and other plastic and non-plastic building materials. Technical knowledge enables every workman to set out his work properly and expeditiously. It saves the foreman's time, the master's time, and the workman's own time, and as a sum total the saving of time is the saving of money. More important still is the advantage of having the work well done, and of the credit reflected on the employer, and the satisfaction given to those for whom the work is performed. We have from time to time in these pages continually pointed out the benefits of a technical education, and shall continue to do so. There can scarcely exist an excuse at present on the part of workmen for the neglect of acquiring that amount of instruction which is a first requisite for the pursuit of their calling.

The schools of the Royal Dublin Society are within the means of all, and the fees are little more than nominal, and the sons of our small or large employers can obtain a very good course of instruction in science applicable to the industrial arts at Stephen's-green. Some years ago it was lamented that the young aspirant was obliged to leave the country to obtain that knowledge required for his intended profession; but instruction now may be obtained in mining, engineering, agriculture, and chemical manufactures. Architects of old, and some young architects still give a final polish to their studies by visiting the Continent, particularly Italy. Such a visit is, no doubt, of value to a truly observing mind, but it is nowise indispensable. To young men intended for overseers, superintendents, and managers, mining, engineering, chemical, iron, and other large works, a visit to the great workshops of the sister kingdom would be highly desirable, as observation of the ways and methods in use in other places would help to supplement their already-acquired knowledge at home. It is vanity and idle boast on our part in this country to be adducing a few isolated instances of students of rare ability. One swallow, or half a dozen, do not make summer. While we should show a just pride in the success of our native students, it should be our desire to increase the number, for until we vastly increase the number of our successfully technically educated students, our arts and manufactures cannot improve. The few rare and really clever draughtsmen and workmen we do produce will be snatched away from us. They will receive such inducement from England, Scotland, or from abroad, that self-interest will naturally prompt them to abandon their native country. This has happened before, is happening now, and will happen again. This country affords a wide field, indeed, for the development of the industrial arts, but though an influx of capital could do much towards that end, the steady and systematic development and spread of technical education amongst the industrious classes will do as much, if not more. Many of our employers are ignorant, very ignorant, indeed, though some are large capitalists, and we fear that no small proportion of them are as indifferent to education as if it were not a matter which vitally concerned their interests. A large number of our present employers were formerly workmen, and it is certain that a large number of our present workmen will be our future employers; then it becomes an important matter to society that the practical

education of the workman should be attended to. Elementary education just lifts the individual out of the rut of barbarism, and it should be made compulsory where neglected by the parents. Technical education, on the other hand, makes the mere rule-of-thumb mechanic a skilled artizan, and, in elevating the individual, tends directly to improved modes of manufacture and to national prosperity. The Dublin, Belfast, and Cork Schools of Art, have a noble task before them, and we trust that the country will witness the results of their teaching, not alone in triumphs of the artist's pencil, but in exquisite workmanship from the craftsman's hands.

"FÁIS AN BEALAC."

"CLEAR the Way," yes of all obstructions and nuisances, animate and inanimate, that exist to the injury of the public health. A sanitary foray on the borders of the city is even welcome, and the action of the outlying townships must eventually force the lazy central authority into action. Despite the neglect of civic authorities, nuisances will be rooted out, and we hope *pari passu*, those whose rule has nursed them so long. When we commenced our mission some years since in directing public attention to the sanitary wants of Dublin, there was scarcely a public journal in the city which deemed the subject of sufficient importance to notice it. When an exceptional incident was noticed, an obscure paragraph in the corner of one of our daily journals was deemed sufficient. Earnestness and persistent advocacy, and continued exposure of scandals on our part and on the part of co-labourers across the Channel, has worked a salutary change. The advent of the Dublin Sanitary Association has ably supplemented the efforts made by ourselves and others to force the disgraceful condition of our city upon the attention of the country and the authorities. The work, however, is scarcely more than half begun at present, for the chief offenders and evil-doers are those invested with powers to abate the evil, yet, by their inaction, encourage it.

THE IRISH BUILDER figured in one of our police courts a few days since, and its sanitary advocacy was made the subject of comment by the sitting magistrate. While we are thankful to his worship for his good opinion of the character of our journal, we respectfully dissent from a portion of the observations he is reported to have made. It has never been our intention or wish to prejudice any case while it is *sub judice*, and to talk about contempt of court in our case, is something like "drawing the long bow." Our article about public obstructions and nuisances was only one of a series devoted to the same subject, and, not only in our last issue, but for the past two or three years, we have, from time to time, written strongly on the matter. We consider the Pembroke Township authorities and others since are only simply doing their duties in prosecuting all offending traders who are found obstructing the right of way by piling their goods on the footways and in the public side channels, and whenever we see local boards avoiding the performance of their duties, we will take care to notice it.

Members of local bodies should make themselves conversant with the Towns Improvement, Nuisances Removal, and other sanitary acts. Each board, we presume, has a solic-

for or law adviser, who is paid out of the rates, and has other pickings beside. The duties of some of these gentlemen are not very laborious, so we may expect they can put any enquiring member in possession of the law of disputed cases. For our part, whenever we see that a necessity exists for the public knowing what the exact state of the law may be in cases of obstructions or common nuisances, we will quote the act bearing upon the subject, as we did in our last issue. We shall allow no loop-hole for evasion or escape, or lawyers' quibbles; but, at the same time, we will refrain from prejudicing any case that is strictly *sub judice*.

We have lived long enough in this city to observe and know the action of public bodies supposed to represent the interests of our citizens, but the majority of whose members invariably represent their own. A more rotten and corrupt set of municipal representatives, with a few exceptions, does not exist in Great Britain than the members of our Corporation. We have stated this before, and we now openly state it again; and we challenge contradiction. Collectively, the Corporation keep dépôts or seething dunghills in this city, which have not only a tendency, but have already generated, disease; and individually we have known more than one member of our Town Council to be living surrounded by dunghills which were poisoning his neighbourhood. How can the owners of petty buildings, outhouses, cellars, and yards be consistently prosecuted and fined, while the local authorities are setting such a pernicious example?

Accidents often happen on our footways and in our streets, and there will always exist the danger while the obstructions caused by traders continue. A man's house may be his castle, and his shop his place of business, but the public roadway or footway is not to be converted into a market square to satisfy his inordinate greed or love of garish display. Corporate and public duties are plainly and unmistakably shirked daily and hourly in our thoroughfares, and the hands of officers of health and sanitary inspectors are restrained, for fear of giving offence. We will be told in a few days by one or more of our daily luminaries that such-and-such a candidate is a fit and proper representative, and that a certain ward will do itself honour in electing him. Partizans on the Press and partizans outside will butter each other's character, and conductors of public journals will stoop to the meanness of fulsome flattery, as they have not scrupled heretofore to stoop to scandal-mongery. Jobbers will be found supporting jobbers, and public liars will ventilate falsehoods by whispers, circulars, and obscure paragraphs, and the whole gamut of fraud and deception will be run through and encoered for the purpose of returning a faction. Some of the retiring candidates seeking re-election will promise everything in respect to the electing rate-payers' interest. The citizens will of course get an increased water supply, new streets, cheap gas, clean thoroughfares, a purified river, and find out as usual that they have been sold, and that instead of getting any of these wants they have been saddled with an increased taxation, to pay for collapsed measures which have benefited the lawyers and their friends on the Council.

Of all this paraphernalia of incarnate nuisance and obstruction we desire to "Clear the Way," for our city cannot be thoroughly purified unless the animate as well as the in-

animate nuisances which infect her body are removed.

As humble but earnest instruments in the sanitary regulation of our people, and the improvement of their homes and surroundings, we hereby declare war to the uttermost against the gross abuses that are encouraged to exist in this city by the parties that should remove them. We will not cease in our advocacy until shame and exposure wither up and blast the evil-doers, and nuisances and living vermin are stamped out together.

"FAG AN BEALACH."

CIVIC LYRICS.—No. XLVII.

THE GREAT BUBBLE-COMPANY BOROUGH CLUB.

In the reign of Shawn of the Hundred Jobs,
When Milesian dhudeens graced our hobs,
And pigtail as thick as a parsnip root
Was grown in the gardens of Lundy Foot,
Our Wardmote Chiefs were then up to snuff;
They had some nice pickings, but not enough;
So a Junta was formed, whom shrewd folks dub
The Great Bubble-Company Borough Club!

Oh, this was a famous Club in its day,
And its Chairman had always "the right of way";
And its members obeyed their doughty Chief,
If he ran, they ran, and cried out "Stop thief!"
But the "bulkies" knew it was all a sham,
And they quietly picked their bone of ham.
They were not paid to kick up a hubbub
O'er the Bubble-Company Borough Club!

There was Martinet Redtape Latitat,
A limb of-the-law and the deuce knows what—
A draughtsman of scores of bills on the shelf,
Promoted to serve comrogues like himself.
He travelled to London on a free pass,
To counsel Street Railways, Sewage, and Gas.
He was long looked upon as a useful scrub
In the Bubble-Company Borough Club!

Martin MacSwivelhook, mighty in words,
In his furnished "Wellingtons" walked the boards,
And swore that the Pillar and Admiral
Were dwarfing his castle upon the Mall.
He moved that the Council should vote a sum
To remove the mile-stone out to Dundrum,
Or somewhere else—that 's to Bealzebub
Thought the Bubble-Company Borough Club!

Suddenly up from the depths came a spark,
And Alderman Flambeau blazed in the dark.
"Digested opinion," said he, "is best;
So I move that we let the matter rest."
"I think it is wise," chimed the mighty Con,
Whose rider referred it to No. 1.
Diogenes here came out of his tub
In the Bubble-Company Borough Club!

Quoth the Cynic—"There's fever on the Coombe,
And the Angean Stable needs a broom.
I think we might manage our tax-made wealth
To improve a little the public health.
The city is full of disease and filth,
And on our own heads will rest the guilt!"
"Question! question! chair! chair!" was the snub
In the Bubble-Company Borough Club!

"I rise up," said Concellor Dandyburn,
"To move that the Council do now adjourn,
And that the best thanks of the meeting be
Now given to Doctor Wheeldumdee
For his dignified conduct in the chair,
And his business qualities everywhere."
The Junta broke up, but the Cynic's rub
Skinned the Bubble-Company Borough Club!

CIVIL.

FRIENDLY AND BENEFIT BUILDING SOCIETIES IN IRELAND.

SOME months since, it will be in the recollection of our readers, we devoted some articles to the discussion of these societies. It was our intention to return to the subject, and we may possibly do so on an early occasion. There is much to reform in connection with both classes of societies before they can be pronounced truly serviceable. Speaking of the Report of the Registrar of Friendly Societies in Ireland the *Globe* says the report "gives further proof of the need for clear and effective legislation. During the past year no benefit building society has been certified, and this fact is attributed to the uncertainty which now prevails as to their future constitution and control. In the last

session of Parliament, no less than three bills dealing with the subject were introduced into the House of Commons. No legislation, however, was effected, and this state of uncertainty is thus injuriously prolonged. In the present report the Registrar gives an opinion upon the value of some of the legislation proposed. The protection to be afforded by Parliament should be, above all things, of simple application. It would be useless to offer to small building societies liberty to register under an Act which repeats the multifarious provisions of the Companies Acts. Such a course of legislation could have but one effect. It would extinguish the poorer classes of building societies altogether. The expenses incident to complex legislation would prevent the effect desired. What is needed is a more simple and direct protection of the investments of the various societies. The suggestion of the report on this point is timely and valuable."

"O'DONEL ABOO."

It gives us much pleasure, however we may differ with his worship on some points, to see him energetically stamping out the sellers of diseased and putrid food. The infliction of fines has proved abortive with milk adulterators. There is no way of putting down the nuisance save by imprisonment without the option of a fine. In passing the sentence of three months on each of the culprits, the worthy magistrate observed, among other matters, that—

"The magistrates were placed in a most awkward position. The public, who were outraged by the sale of poisonous meat, called upon the magistrates to administer the law; and when the law was administered in deserving cases, appeals for a remission of the sentence were made, even by the prosecutors. In one case recently in which he had sentenced a man to six months' imprisonment for a similar offence, a memorial on his behalf was got up and signed by the past Lord Mayor, the present Lord Mayor, and the coming Lord Mayor, as well as by forty-nine members of the Corporation; and, yet, the only ground for this conduct was that the man had a wife and three children, and a donkey and cart depending on his industry. Dr. Cameron said he had been asked to sign that memorial, but he had declined. Mr. O'Donell thought that if these three Lord Mayors and forty-nine Corporators had each put their hands into their pockets and subscribed 6d. a-piece they would have done the defendant's wife and children a greater service, for they would have kept them out of the workhouse, and enabled the donkey and cart to be put to some useful occupation. He might mention that in another case where a man brutally assaulted a woman without the least cause, and he was duly punished, a memorial was got up on behalf of one of a class of malefactors who deserved no sympathy. Here were people who, for the sake of a paltry gain, endangered the lives of the citizens by selling poisonous meat, and the moment they were caught there were people to come forward and plead for them. He would not remit an hour of the sentence."

The Corporation of Dublin have been for several years playing fast and loose with the lives of our citizens. In fact in a number of cases they have prosecuted with one hand, and defended with the other. It is time that the full force of the law should be set in motion, to put a stop to nefarious and murderous practices, by which the hard-working poor are poisoned and plundered by wholesale. Let no quarter be given to adulterators of food or drink, or users of light weights and measures.

One class of vermin in our city still remains unmolested—the medical quacks and the vendors of obscene advertisements, circulars, and handbills. We hope they will be hunted down by the police authorities at once. Their nests of feculence and filth are well known to members of the police and to others. We have already published their names, and will do so again, and let themselves and their agents be apprised of the fact.

The citizens stand indebted to the sitting magistrate of the Northern Divisional Court for the above decisions, and the least compliment they can pay him is to shout, without any political signification, "O'Donell Aboo!"

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

MONASTERIENAGH.

THE remains of this once magnificent abbey are situated in the parish of Manister and in the barony of Poble O'Brien, County of Limerick. Ware names it Nenay, or De Magio, that is of the Maigue, a river, in the neighbourhood, certainly, but which does not come within over two miles of the abbey, which was erected on the banks of the Commogue. The ancient form of its name will be found in the *Annals of the Four Masters* as "Mainistir-an-sonaigh"; it is probable that in remote times an aonach, or fair, had been held in the locality, and which gave it its name, as we find many places in Ireland designated from this circumstance, thus—Eanach, Eanach-dubbh, Eanagh-duin, &c.—(*Ann. Four Mast., Index Loc.*)

Ware states that the abbey of Nenay or de Magio was erected in A.D. 1148, or 1151, by an O'Brien, and that it was dedicated to the B.V.M. Archdall makes the same statement, and adds that the founder furnished it with monks of the Cistercian Order from the abbey of Mellifont, in the County of Louth. The cell of Feal was afterwards annexed to it.—(*Monast. Hib.*)

I am strongly of opinion that this locality owed its selection, as the site of the first house of that Order erected in the south, to the probable fact, that this was the very place where St. Malachy O'Morgair took refuge on his being driven from his episcopal seat at Connor; this occurred in the year 1127. We are informed that he fled for protection to his old friend and benefactor, Cormac MacCarthy, king of Munster, who granted him the site of a monastery. It is stated that he took with him one hundred and twenty monks. The Rev. John O'Hanlon, in his *Life of St. Malachy O'Morgair*, thus describes this transaction:—"A place was set apart for the building of a monastery, in his kingdom; and with renewed zeal and energy, the religious community set apart about the erection of their new foundation. The king expended his treasures, in a very liberal manner, to aid the undertaking, and was so anxious to see the community properly lodged and comfortably provided for, that he was continually present with them, during the progress of the work. Although in habit, Cormac appeared a king; he nevertheless comported himself as if he were, in reality, the subject of Malachy. He sent a number of animals, for the use of the exiled monks; and in a most hospitable spirit, supplied every thing necessary for their support. The charge of their maintenance was at the cost of the monarch. In a short time, this foundation prospered, as was usually the case with all undertakings, commenced and conducted by our saint. The number of his disciples increased, and rich endowments were made, for the support of the house. King Cormac visited his former friend and master very frequently, to obtain spiritual aid and advice."—(pp. 55-6.) Mr. O'Hanlon of course gives his authority for these statements, namely, St. Bernard's *Life of St. Malachy*.

Now, an interesting question has been raised as to the locality of this monastery; the original authority states, in a district or place named Ibrac:—"Hac occasione monasterium Ibracense constructum est."—(*Sancti Bernardi Vita S. Malachie*, cap. ix., § 18.) Ware was of the opinion that Ibrac represented the abbey of St. Barr, or Finbarr, at or near Cork. Allemand placed it at Beggerin, on the coast of Wexford, originally founded by St. Ibar; but, as Dr. Lanigan remarks, this would be out of Cormac McCarthy's kingdom.

The latter able and conscientious writer thinks that it was in the territory now known as the barony of Iveragh, founding his conjecture on some similarity in the names, "the b and v," as he states, being "commutable in Irish." This opinion has been

adopted by the Rev. John O'Hanlon, who, in a communication read before the Royal Irish Academy, and published in their Proceedings (vol. i., ii. ser., p. 107), endeavours to show that he has identified St. Malachy's Monasterium Ibracense with a small island near Valentia, on the extreme S.W. coast of Kerry, called Illaun-na-Teampuil, or Church Island; the entire evidence he adduces consisting of Dr. Lanigan's view of the identity of the terms Ibrac and Iveragh, written in some ancient records as Ubh Rathach, and a statement made by a Mr. Andrew O'Sullivan, of Cahirciveen, a local Seanacuidhe, that "he had read in an old Irish MS. that St. Malachy O'Morgair, with four clerics, lived there; but the title of the MS., or where he had seen such record, had then escaped his memory."—(p. 112.) The italics are mine.

Mr. O'Hanlon describes the buildings on Church Island; here, however, we have not the remains of a stately abbey-church, and of comfortable conventual buildings, such as we would be led to expect. The existing remains are thus described by him:—"The present writer's admeasurements of the square and fort-like building on the interior, were 11 ft. from wall to wall, while at the base the walls were 5 ft. 8 in. in thickness, but they gradually diminished to 4 ft. 7 in. at the highest point. Although a very solid structure, it appeared to have been greatly ruined. Nor is this a matter to be wondered at, considering its very elevated, exposed, and uncemented condition. The 'bee-hive' shaped house or *cloghaun*, measured with a tape-line 86 ft. in circumference at the base, which arose over a sort of narrow stone terrace. [I presume the writer means an offset.] Interiorly it is nearly circular, and about 14 ft. in diameter; the rude walls are 7 ft. in thickness at the apparent door-opening—now quite ruinous,—and about 9 ft. in height as they then stood. . . . What appeared to be the *débris* of somewhat similar structures, were scattered on other points of Illaun-a-Teampuil."—(pp. 111-12.)

Such are the ecclesiastical remains now existing on Church Island,—two clochauns rudely built of uncemented masonry, neither of them enjoying the luxury of a window, and one of them having a doorway 2 ft. 1 in. high, 1 ft. 10 in. wide at bottom, and 1 ft. 1 in. wide at top.—(p. 110.) It cannot for one moment be credited, that in the twelfth century, at the very period that Cormac's Chapel was erecting, that St. Malachy O'Morgair, a patrician by birth, a learned and accomplished ecclesiastic, and whose aspirations were of a high order, should have selected a wild and barren rock on the extreme S.W. of Kerry, and with his hundred and twenty companions have there resided, erecting such rude and uninhabitable dwellings. In the first place, this island does not answer to the account I have already quoted of the erection of the monastery, which must have been very convenient and accessible to King Cormac, then residing at Cashel, as it is stated "that he was continually present with them during the progress of the work"; and again:—"King Cormac visited his former friend and master very frequently to obtain spiritual aid and advice." Now, could this have been the case if St. Malachy had established himself in Iveragh, the remotest and wildest part of his dominion, forest-grown and almost impenetrable as it then was, a place barely accessible during the last fifty years, and still looked upon as a sort of Ultima Thule?

In the second place, are we to believe that the monastery—the erection of which is so glowingly described, which appears to have cost so much money, which was superintended by a monarch, and had such rich endowments—is represented by the rude huts on Church Island; at the very time, too, that Cormac's Chapel was erecting, with all its rich and elaborate detail, and wonderful construction.

Thirdly.—From the intimate nature of the relations existing between Cormac and Malachy, it is quite evident that the monarch induced the bishop to come and take up his abode near him, and that the latter would

never have made his residence so far from the scene of his own past career, and of his future hopes, were it not to be nigh the person of his former friend and pupil.

These considerations are, I submit, unanswerable, and we must conclude, that this remote and then inaccessible place does not answer the account set forth in the text of St. Bernard's *Life of St. Malachy*. I can, however, suggest another that will fulfil the conditions of the statements already given, and that is, the district anciently known as Imleach-Ibar, or Iubar, rendered by Dr. O'Donovan as the Holm or Strath of the Yew, now Emly, in the County Tipperary. A monastery was founded in this place by the celebrated St. Ailbhe, some time in the fifth century, which became a place of great note, a seat of learning, and a missionary centre for that part of Ireland; the district around was named from the site of this religious house. In this locality, then, I believe, we must look for the Ibrac of St. Bernard's text. Imleach-Ibar is about twenty miles from Cashel. I do not assert that it was in this exact spot that St. Malachy's monastery was erected, but in the district. I submit that the probabilities are, that Manisternenagh was its original site. It was in King Cormac's dominions, in a rich and fertile district, was convenient to the monarch's residence at Cashel, being but thirty miles distant as the crow flies. St. Malachy must certainly have been acquainted with this place during his sojourn in the south, for we find that it was selected by him as the site of the first Cistercian house erected in the south of Ireland, and which was commenced in 1148,—in fact it appears to have been the second in all Ireland, Mellifont being the first, in 1142.

The probabilities are, that this was the Monasterium Ibracense, and that, on the introduction of the Cistercians by St. Malachy, he handed over to this new Order the house he had himself founded, with its possessions, who forthwith in 1148 or 1151 commenced the erection of the abbey buildings, some portions of which at present exist.

The remains of this once magnificent abbey-church stand on a low green inch near the small river Commogue, a tributary of the Maigue, which itself is a tributary to the Shannon. The church appears to have been of greater size than any of the churches of the Cistercian Order in Ireland; it consisted of a nave with aisles, a chancel, transepts, and two chapels east of each transept; it has, however, been so altered and mutilated that but little of the original building remains. The nave was 160 ft. in length, and 29 ft. in breadth between the piers; it was entered by a western doorway, the stonework of which has been torn away, leaving an unsightly gap. Over this doorway is a lofty couplet window, semicircular-headed, with broad effective mouldings.

The original nave had an arcade of semicircular arches, springing from circular piers with carved capitals; this is evident from the responds still existing; those on the piers which supported the central tower having carved cushion capitals, remarkably well executed. This arrangement, however, no longer exists. At some period—apparently not a very remote one—the nave arches fell or were destroyed, and an arrangement of heavy quadrangular piers with plain pointed arches substituted. The piers have no caps, and the arches neither moulding nor chamfer. This arrangement, however, does not extend the entire length of the nave, as about 50 ft. at each side from the west gable is built up solid, without any trace of pier or arch.

Across the nave, at about one-third of its length from the east end, is built a solid wall the entire height, having in the centre a small pointed arched entrance. It would appear as if this building had fallen at some late date into the hands of some of the other Orders, who affected long chancels, those of the Cistercians being very short, and having lofty arches opening into same; while, on the contrary, the chancel-arches of the Franciscans and Dominicans are usually very low

and narrow, many of them not being much wider than ordinary doors. The position of the wall across the nave would divide the church into the usual proportions affected by the above orders.

The nave walls appear at present to be about 40 ft. in height; in reconstructing them, the builder inserted the old semicircular-headed clere-storey windows in their proper places. There are no remains of the aisles, but the weathering of their roofs remain on the nave walls. The four arches under the tower are very lofty, about 45 ft. in height; they are supported by massive piers which have carved Romanesque capitals of the fluted form. The arches leading into the transepts are now built up.

The chancel is of the same width as the nave; it is covered by a high-pitched pointed arch, the weight of which is kicking out the side walls owing to the removal of the side chapels, which acted as buttresses when originally built.

The east window is a lofty triplet, Early English in character, and of graceful proportions; it is deeply recessed by an arrangement of bold squares and chamfers, and has a fine effect; it has no label, and the external chamfer, from the springing of the arches upwards, runs into appropriate mouldings.

The workmanship of the older portions of the church is of admirable character, the stonework of the piers and arches of tower, and the dressings of the east window and other portions of the Romanesque work are very finely executed, in a yellowish stone of oolitic character, not found in the neighbourhood, the blocks being finely cut and closely jointed.

There are no portions of the domestic buildings remaining; the walls of a small rectangular chapel, of late date, stand at the south side of the chancel.

I have thus endeavoured to give some account of the Cistercian Order, and of the character of the buildings erected under their influence in Ireland. It cannot be denied, that they caused a great revolution in native church architecture as to size and plan, but certainly not as to details, as the decorative features to be found in their edifices are those which had been in use long previously. In truth, that order appear to have studied grandeur and simplicity in their buildings rather than ornate effects; carving was sparingly used by them, and their mouldings were of the simplest character, though in general effective.

We have no evidence whatsoever of the importation of the bands of workmen from England and the Continent, which some writers have asserted took place in the twelfth century, and to whom they state our island was indebted for her christian architecture; the only documentary evidence we have on this point is the solitary statement in the life of St. Malachy O'Morgair, that his friend St. Bernard of Clairvaux, sent him the Gaulish monk, Robert, to direct the building of the Abbey of Mellifont, the first Cistercian house erected in Ireland, in 1142 (*ante*, p. 126). On the contrary, it is quite evident from the peculiar character of the details of the ecclesiastical edifices erected in Ireland during the twelfth century, that the workmen employed were natives.

The distinctive developments of architecture in Ireland, at the various eras of change, owing to the peculiar genius of the Celtic race, are most decidedly marked, and have been noticed by foreign writers; a very acute and experienced architectural critic, in a series of papers published in the *Gentleman's Magazine* 1864, takes particular note of these national distinctions; he writes:—"The buildings of Ireland, as we might naturally expect, have a very marked and decided national character of their own; they are distinctively Irish, and no one accustomed to the buildings of other countries can for a moment mistake them."—(*Jan.*, 1864, p. 4.); and again:—"Whatever opinion may be formed of the dates of Irish buildings, there can be no doubt of their very distinct national character, and that they are highly interest-

ing, and deserve to be better known throughout Europe than has hitherto been the case."—(*Ibid.*, p. 6.)

We have therefore no grounds for depriving our countrymen of the merit of having developed, in their own land, in a manner peculiarly national and interesting, the various eras of Romanesque and Pointed architecture.

In the preceding pages I have by no means exhausted the subject of Romanesque architecture in Ireland; a considerable number of examples exist, scattered over the country, which present us with features of much interest to the architect and the antiquary; the situations of many of these are recorded in the admirable descriptive catalogue appended to Mr. Marcus Keane's work, *Towers and Temples of Ancient Ireland*.

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

[Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

WE here continue Semple's observations on limestone, sand, mortar, and his account of the experiments he made in testing the nature, qualities, and strength of these materials for certain uses, but particularly with a view to buildings in water.

MORTAR, GROUT, AND CONCRETE; EXPERIMENTS.

"AS I have desired you to preserve and use even the powder or smallest fragments of the limestone, I shall here assign my reason for it, which is, that the powder of fresh quarried limestone (which you will find to have a sulphureous smell, partaking greatly of the smell of gunpowder) has this petrifying quality to a very high degree, and that calcination heightens that quality, is universally agreed to; but yet it does operate in that manner used alone. For instance, if lime be left to lie by itself, either on land or in water for thousands of years, it would neither petrify nor come to any degree of hardness, nor would sand alone petrify, but when these two unite, they begin to operate powerfully upon one another.

"In order to come at a thorough knowledge of this petrifying quality, I would recommend the following experiment:—Take ten pounds of limestone, fresh quarried, pound it into very fine powder, and take the like quantity of sharp, clean, and fine sand; get thoroughly burnt roach lime hot from the kiln, the like quantity, put it into a vessel, and pour water upon it leisurely, and stir it gently till you find it is all dissolved, and as it were melted into a hot liquid; rub and thoroughly mix the flour of limestone with the sand, and without letting the lime-liquid have time either to cool or evaporate, stir in and most effectually mix and work them all together very stiff, and beat them thoroughly on a clean boarded floor, and then make this mortar into blocks, about the size of a brick; bury one of these blocks in very damp or wet ground, put another entirely in water, and keep a third in some dry place. Now I am confident that each of these three blocks will, in a reasonable time, actually petrify into stone, and become as much so as if they had been cut or wrought out of a rock, and that they will endure calcination, and become good lime afterwards, but not so rich as that from whence they were derived. And with respect to lime, that which is deposited in the bowels of its own natural mother, will grow the first into stone; that laid in the water will be the second; and that which is kept in a dry place will be the last, and of a short brittle nature. But the first, if in a large block, will not only become hard but stout and stubborn, and would stand and give stout resistance to a hammer or punch. The second would be more free, and the third fly off short. I apprehend that this little experiment is worthy of attention, because by ascertaining the time of these deposits, and trying the blocks from time to time afterwards with a tool or the point of a pen-knife, some

useful knowledge might be obtained; but be that as it may, these are some of my reasons for recommending limestone. However, where that cannot be conveniently got, you must make use of such hard stones as you can get, but be sure to have them broke to the sizes above mentioned, for such will most assuredly cement and unite together with the lime and gravel, and each of the stones will contribute to sustain the confidence reposed in them. Whereas, if one large stone was put in among them, it would not unite, but stand stiff, and thereby be a great means of shifting the weight from itself, and throwing it on the small stones that surround it, and consequently would overturn instead of supporting the weight which it was destined to bear. For these, therefore, and many other reasons, I must earnestly recommend it to your practice to use no other but small stones in your stuffing.

"You are also to take particular care that your sandy gravel is sharp and clean, and of that degree of fineness as may contribute proportionably to the solidity of the whole, and not to throw your stones in one place, and your lime and sand in another, but let them be all equally mixed throughout the work, and all this can be easily done, for let the water be what depth it will, or your hurry ever so great, this you may do, and you are not to neglect it; and, observe also, that this sort of work can be much more effectually done in water than upon dry land, even admitting that it was to be done with wet grout, because these three materials being thrown in proportionably together, each stone and every particle of the gravel and sand will take possession of a place suitable to it, but the sand in particular will continue in quick motion till it finds out a place of rest proportionable to its size, and instantly fill up the most minute vacancy (provided that you observe these directions properly) and immediately become as compact and as solid as a bank of a gravel-pit that has been formed by nature."

[Semple's observations may be deemed old-fashioned, but the facts they embody are worthy of attention at this day when worse lime, sand, or mortar in *globo* is used systematically than has hitherto ever been used in the progress or history of the building art. The making of good mortar does not receive the attention from modern builders that it deserves, and there are but few architects who bother themselves whether their works are carried out by the use of the cement or mortar they specify. Indeed, it is not too much to say that numbers of architects as well as builders do not know the constituent elements of good mortar. The theory of the hardening of mortar is even at present very imperfectly understood—the generally received idea being that a combination of silicate of lime and a compound of the carbonate with the hydrate is formed which, together, set in the solid mass. Mortar is commonly prepared by mixing one part of freshly slaked lime, and two or three parts of sand with sufficient water to form them into a paste. These quantities—if the lime be good and the sand sharp and clear—would make mortar of a good quality, but in the speculative buildings of the present day, and even in others where there exists no necessity for "scamping," the sand that is used is little better than loam or "riddlings," and the lime is poor and deficient in quantity. Though these old builders had little or no knowledge of the chemistry of the components of good mortar, yet, by experience, they knew what good mortar was, and made it. Their works still standing testify the fact, the mortar being harder than the stone. The cause of so many buildings falling at the present day before finished or immediately after being finished, may be attributed, in many cases, to the wretched mortar or cement used, which is a mere make-believe. Tall chimneys topple over, sacrificing many human lives, and putting their proprietors and builders to thousands of pounds expense. The cause may be summed up—bad work and bad materials. Before continuing Semple's

observations, we will quote here some remarks by another old native architect named Thomas Covey, to whom we before alluded as being engaged in building some of the old forts and barracks in this country in the eighteenth century. He appears to have been a cotemporary of Semple.]

SOME OLD OBSERVATIONS ON SAND.

"The writers on architecture do not seem duly to have attended to the cementing materials proper to the climates in which their buildings were. For where the sand is clearer and brighter, less loamy and less damp, as in the hotter climates, less lime is required, and so our clearest and best sand requires at least part 1½ to part 1 of lime, but when the sand is more moist and loamy, twice the quantity of sand to that of lime is required. For the best sand for mortar is the sharpest, or that which has points or corners in it resembling salt in form, and seems in some sort to hurt the hands when rubbed between them. Now the quantity of lime necessary to temper up a mortar with such sand should be no more than what runs into the interstices of those grains of sand when their corners or points are linked one into another, by which means it is a solder that ties together the bodies of those grains, and makes the whole mass compact, and it is plain that the interstices between these angular parts are less than the body of the sand, and therefore that a less quantity of lime should be used; but if a greater quantity of lime be put in than it is necessary to answer this end, it then keeps asunder those points and corners that should lend and bind into each other, being the principal seat of the cementing quality, the lime being no other than the glue or solder that ties them together.

"It is usually admitted as a maxim, that fresh-water sand is the best for use, but this is liable to exception, for where there is a running stream, there is, by the force of the current, a constant friction of the particles of sand one against another (and this will be more in the case of rivers situated by the sea and agitated by the tides) which rubs off those points and corners which make them tie into one another, and the sand becomes round and pebbly, and its particles more apt to separate from one another, and accordingly I have observed the difference between these sands have appeared thus:—Lay up a heap of the pebbly sand, and another heap of the sharp or cornered sand: the least hard wind will blow about the first, but scarcely move the second.

"I cannot illustrate the nature of this difference better than by observing, that if you put your fingers among a parcel of nails, their points and the edges of their heads will so link them together, that you will take up a large quantity, whereas, if you put your fingers among a parcel of boy's marbles, you will hardly bring up more than your fingers can contain, and such is the difference between the cornered and pebbly sands, whence appears the superior cementing quality of the first. Accordingly, the best sand for the purpose of cement is that from a river or large lough which swells but once a year with the floods, and as it falls it gently brings off the loam and sediment, this sand having no constant friction, which is the case of the sand from the lough above mentioned, and Lough Neagh affords a sand of the same binding quality.

"The binding quality of the cement used by the ancients in this kingdom appears in many of the old castles, and is a matter of admiration, the mortar standing the waste of time and weather equally with the stone whereof they were built. Now, I have observed, in examining closely into the walls and mortar of these old buildings, that the ancients used what we call grout in their walls, i.e., a liquid made up of the clearest, sharpest sand and lime, and in every course of masonry, this liquid is poured in and fills up all the cavities that are between the stones, the mortar being then fresh and moist unites and causes the whole to inclose and bind about the stone in one compact

mass, and as the wall dries the more strong the cement becomes. The old walls demonstrate this, for it is rare to find a cavity in them but what is filled up with cement so compact and close as could not be conveniently done with a trowel.

"There is, indeed, one objection against grouting, viz., that the walls will remain moist on the inside until all the liquid is dried up and continue so for some years, which will make the building not immediately habitable, but this inconvenience our forefathers dispensed with for the sake of having walls that would stand for generations."

[There is both sense and shrewdness in most of the above remarks. Covey, no more than Semple, says nothing on the chemistry of the materials, but speaks from close observation and experience. Both common river and sea-sands comprise finely divided silicious matter with particles of other substances. Sand sometimes becomes calcareous through the presence of carbonate of lime; besides, for the making of mortar, a variety of sand is used for a variety of useful purposes and common wants. Pure silicious sands are valuable in the manufacture of glass, and are used for what is called ameliorating dense clay soils, also for moulding, casting, and other uses. The uses of lime, apart from building purposes, are manifold, but it is not our intention to enter that wide field of discussion. Advocating as we do, and always have done, in this journal the technical education of the workman, we desire those connected with the building art to study the nature and properties of the materials they use. Not only the bricklayer and mason, but even the handy labourer may one day become an employer, and a good knowledge of limes, cement, sand, mortar, grout, or concrete, will be valuable to him, unless he intends to pursue the career of a "scamp." Education is now to be had cheap, and knowledge is within the reach of all. We hope it will be the study of the rising generations of building workmen and builders to imitate the painstaking labour and honesty of these workers of the old school, of whom we have been given some particulars.]

(To be continued.)

THE KINGSTOWN DRAINAGE.

SIR JOHN HAWKSHAW's report is now before the public, and what are the Commissioners prepared to do, or must we ask what will the opposition be content to agree upon? We confess, however, that Sir John Hawkshaw furnishes the Commissioners with very little information over what they had already known; and, able engineer as he undoubtedly is, his personal survey of Kingstown was of too limited a character to command that confidence in his judgment that we would otherwise be inclined to give, and ask of others to bestow. The line of drainage recommended by Sir John is similar to that proposed by Mr. Pallas six years ago, and also of that subsequently recommended by Mr. Hassard. The cost will also exceed the former scheme (if carried out) by several thousands.

A sewerage to embrace the whole drainage area of Kingstown, Dalkey, Blackrock, and smaller districts would, no doubt, be very expensive, and present greater difficulties than a single system; but if all the townships were agreed, there would be a considerable economy in the combined effort. The efficient disposal of the sewage, its utilization, and the preservation of the health of Kingstown and the adjoining districts is a matter of great importance. We have on a former occasion spoken of the tidal difficulty, and the necessity of preserving a clean beach and an unpolluted tide for bathing purposes. We have also recommended an irrigation scheme as far as practicable, and we believe it is practicable.

We trust in any case there will be an end to the squabbling over the drainage schemes of Kingstown, and that the Commissioners will agree to proceed at once with even an

instalment of the necessary works required to put the township in a sanitary condition. The tide of fashion is very fickle, and another decade of inaction may work such a change in the social status of the inhabitants of Kingstown as to cause "a weeping and gnashing of teeth" on the part of the traders and remaining inhabitants. The preservation of the health of the township calls for the first service on the part of the Commissioners.

SOCIETY OF ARTS UNION OF INSTITUTIONS.

THE "Programme of General Examinations for 1874," says:—

"These examinations have been established for the benefit of the members and students of institutions in union with the Society of Arts. Such persons are, commonly, mechanics, artisans, soldiers, labourers, clerks, tradesmen and farmers in a small way of business, apprentices, sons and daughters of tradesmen and farmers, assistants in shops, and others, of various occupations, who are not graduates, under-graduates, nor students of a university, nor following nor intending to follow a learned profession, nor enjoying nor having enjoyed a liberal education. To all such members and students in the institutions, and to other persons of the like condition, male and female, the examinations, certificates, and prizes, described in this programme, are open on the general conditions stated below. Persons, however, who are, or have been, professional teachers, or pupil teachers; persons who either are enjoying or have enjoyed a liberal education, or who occupy a higher position in society than those above described, may obtain certificates, but cannot compete for the prizes. The certificates are not completed for. They are awarded as records of positive, not comparative, attainment. The prizes are completed for. Certificates of three grades are awarded, and the names of the candidates who obtain prizes and certificates are afterwards published in the *Journal of the Society of Arts*. The candidates for examination have not to go to a distance from their homes. The examinations are held in all places in the United Kingdom where a Local Educational Board connected with the Society of Arts is willing to make the requisite arrangements. The examinations are—The previous examinations by district unions and local boards for ascertaining the fitness of candidates to present themselves at the final examination. The final examination by the Society of Arts' Board of examiners, under the supervision of the Local Boards."

Among the prizes this year is the Prince Consort's Prize of twenty-five guineas, continued by Her Majesty, to be obtained by any candidate who, receiving a certificate of the First Class in the current year in any of the subjects, shall have obtained in that year and the three years immediately preceding it the greatest number of certificates. The Council offers special prizes to females also who, obtaining a certificate of the First Class in the current year in any of the subjects, shall have obtained in that year and the two years preceding it, the greatest number of certificates (a prize of ten guineas). Additional prizes are also offered in sums of £3, £2, and £1 respectively to the three candidates who shall send the best exercise written from dictation. For writing, prizes of £5, £3, £2, £1, are offered, and similar prizes for manuscript printing.

The general prizes of the year 1874 are thirteen in number, and comprise the following subjects:—Arithmetic, book-keeping, floriculture, fruit and vegetable culture, political economy, English history English language, logic, French and French correspondence, Italian, Spanish and the theory of music. The first prize in each of these is £5, and the second £3. Persons desiring to be examined or to form a Local Board for examinations in any part of the United Kingdom, are advised to communicate with the Secretary of the Society of Arts, Adelphi, London, who will supply a programme containing all the necessary particulars. To all interested—and we hope there are many,—the Society of Arts is affording large facilities for the educational advancement and improvement of the people,—facilities which, we trust, will be availed of despite occasional difficulty.

THE LATE THOMAS WEBB, BOOKSELLER.

DUBLIN has lost one of its oldest booksellers—probably the oldest in the city. As a resident of the whilom "Mall," the late Thomas Webb could fairly claim to be the longest. He commenced business in the year 1816, and for a period of fifty-seven years carried on his trade in the same street. He held his position throughout many eventful changes in his craft in this city, and witnessed the extinction of several noted publishing and bookselling firms that flourished before and subsequent to his start in life. Mr. Webb was one of the first—if not the first—to introduce the circulating library system into Ireland, and was the medium for largely developing it. He also introduced the Foreign element into it, and gathered together an extensive French library, and by no means an indifferent German one. The sale of books for juveniles was also a chief feature in his establishment. He died of a lingering disease at his residence, 47 Lower Sackville-street, on the 5th instant, much regretted by all who knew him.

MUNICIPAL QUERIES.

BY A CITIZEN.

I WANT to know how many shareholders in the Gas Company are members of the Corporation, and if it is an honest act on the part of some Gas directors and Corporators to be promoting a bill in which they have a direct pecuniary interest retrospectively and prospectively as members of a public board?

I want to know if a Municipal Council is to be utilised by a father to serve the interests of his son and his relatives, and if it is legal for such parties to profit by the public contracts and jobs belonging to such Corporation?

I want to know if there is any law by which a sharp and swift penalty can be enforced against a member of a Town Council for accepting a bonus—a commission for using his interest in securing for a public contractor a job which was not put up for public competition?

I want to know how many senior and junior counsel are employed (for instance) in our Corporation, and how many times in each year do counsel so employed travel between Dublin and Westminster at the cost of the ratepayers, for the purpose of perfecting the legal machinery of bills and bogus companies, many of which are intended to aggrandise the few and distress the many?

I want to know why Corporate balance-sheets cannot be prepared like those of other bodies or commercial firms, and why such a multitude of "sundries" and "petty expenses" are inserted?

I want to know by what system were the names of twelve members of the Town Council secured for a recent requisition, and if it is true that private circulars were issued and a hole-and-corner meeting held in a certain hotel to hatch and mature a manifesto, with the ulterior object of deceiving the citizens?

I want to know if it is a fact that certain overtures were made within the last few days to some influential members of the Chamber of Commerce to hold their peace in the event of a rehabilitated scheme being favourably received by the citizens, and that if such peace were secured, the result on the one hand would be made commensurate with the service on the other?

I want to know is there any immediate connection between Waterworks and Gas Works, and by what sort of inspiration are the dabbles in one made eloquent on the other?

I want to know why two or three of our daily newspapers are more deeply concerned in the Gas question than their brethren, and if it is possible they see a longer way before them, or is it from the fact of their being colour-blind?

I want to know to what extent will newspaper proprietors be affected by the continued existence of the present gas company, or otherwise by transfer of such works to the Corporation, and how many newspaper men have been directors or shareholders during the last ten years in the Dublin Consumers' Company?

I want to know how many sods of Bog of Allen turf would it take to manufacture the mystic number of 833 cubic feet of gas?

I want to know how many inches of advertisement are sufficient to procure a lively "leader" from the incorruptible organs of public opinion in this city?

I want to know if six and a-half yards of broadcloth cover an editor from top to toe, how many coats of whitewash will it take to disinfect a gas director?

I want to know if water finds its own level, how liquid must the dirt of this city be to enable it to reach the same height, or if it is not likely that the scavenge will soon reach the level of the water supply?

I want to know, if six chimney-sweepers can clean the flues in the City Hall before breakfast, how many flushing machines and sweeps would it take to flush the Poddle?

I want to know how many hundred tons of filth are in the bed of the Liffey, and how many scavengers and hopper barges are necessary to remove the deposits?

I want to know how many candle-gas is sufficient to throw light upon the dark doings of the systematic jobbers in the Dublin Corporation?

I want to know when will the oppressed ratepayers and hard worked citizens of Dublin shew a little of their ancient public spirit, and rise *en masse* to put an end to the abuses in their Corporation, by returning useful, honourable, and efficient representatives?

I want to know if I have said anything in the above queries that can offend an honest man; yet, notwithstanding, I am certain there are many who will feel offended, but are they honest? They believe themselves so, and conceit is as good for these fools (or rather rogues) as physic.

THE FINE ARTS.

THE October Exhibition of the Irish Amateur Drawing Society was opened on the 10th inst. in the Assembly Rooms, Tholsel, Kilkenny, and naturally created a large amount of interest. Three ladies, members of the committee—Miss Keane, the Baroness Prochazka, and Miss Currey—devoted the most untiring exertions to the making of the preparations, and seeing to the proper carrying out of the hanging and classifying of the pictures. The classes are 15 in number, viz.—1. Oil-colour Studies—Figures. 2. Oil-colour Studies—Landscapes. 3. Oil-colour Copies—Figures. 4. Oil-colour Copies—Landscapes. 5. Water-colour Studies—Figures. 6. Water-colour Copies—Figures. 7. Water-colour Studies—Landscapes. 8. Water-colour Copies—Landscapes. 9. Studies of Animals, in oils and water-colours. 10. Copies of Animals, in oils and water-colours. 11. Studies from Still Life, in oils and water-colours. 12. Studies of Flowers, in oils and water-colours. 13. Chalks and Pastels. 14. Etchings, Sepia, and Pencil Drawings. 15. Original Subject, "Summer."

The walls (we quote from the *Moderator*) are completely covered with pictures to a convenient height for their proper inspection, and there are also several stands of pictures through the room, so that altogether it forms a very extensive collection. As regards comparison with the previous exhibitions of the society, it must be said that the size of pictures is now of a larger average, and they cover a greater extent of wall. The class of water-colours from nature is a particularly excellent one, and proves that the ladies made good use of whatever fine days were to

be had during the summer. The studies of flowers from nature are admirable—a screen contributed by Miss Adeline Newton, ornamented with flower painting, being particularly admired, and it takes the first prize in class 12. In oils, there is only one head; but the landscapes in oils are good—they are not so numerous as those in the water-colour class, but many evince fair merit. The original etchings attract much notice; some by Captain Thurlow, of camp scenes during the Autumn Manœuvres, being particularly good.

Sir George Hodson acted as judge, and accompanied his award list with the following report:—

"In the discharge of my duties as judge upon the present occasion, I have been most favourably impressed with the excellence of many of the productions exhibited. In the department of landscape studies from nature in water-colours more particularly, there is a very considerable attention to natural effects, combined with spirited and artistic handling; and in the treatment of flowers, also from nature, there is much evidence of taste in arrangement and delicacy in execution. With the exception of the specimens in competition for an original subject—a department at all times most difficult of treatment,—in which the prize has been withheld, this exhibition appears to me to be a most creditable display, holding out the promise of future advancement in the various branches of the art."

THE IRISH BOARD OF WORKS.

THE re-organisation of this department, in pursuance of the Treasury Minute, will scarcely afford satisfaction except to a few. The changes made, of course, carry an importance. It is complained that many officers of merit and long servitude are passed over, and that the office staff, almost as a whole, are ignored. Mr. R. S. Stack is promoted to a first-class clerkship in the Secretary's Department, and the vacancy created by that gentleman's promotion will not be filled. The post of Chief Clerkship, hitherto deemed indispensable to the conduct of the business of the department, lapses. By the new regulation the Secretary's Department is divided into three branches, with a principal clerk in charge of each, viz., Drainage, Navigation, and Harbours, Mr. Latimer; Buildings, Mr. Brophy; Land Improvement and Irish Land Act, Mr. Stack. Mr. Thos. Long has been appointed Private Secretary to the Chief Commissioner; Mr. S. U. Roberts, C.E., has been appointed Assistant Commissioner, whilst the Chief Engineer (Mr. Forsyth) retires on superannuation. All's well that ends well.

SANITARY AND OTHER NOTES.

PUBLIC obstructions still continue in our streets and on our footpaths in every quarter of the city. The commissioners in one or more of our townships have taken the matter up, and the Corporation will be compelled to follow suit. The mere fining of offenders for the infraction of the sanitary laws will not do; and when offences are repeated, the option of a fine should not be allowed.

In respect to the sanitary state of the city, there is very little improvement observable. The report of the sub-committee of the Sanitary Association illustrates very clearly the condition of portions of the town, as it also illustrates the negligence of the local authorities. The following resolutions were unanimously adopted at a recent meeting:—

"That, as Asiatic cholera has been introduced into the port of Liverpool within the last few days, application be made to the Public Health Committee of the Corporation, and to the Board of Guardians of the South Dublin Union, requesting information as to what practical measures have been taken with a view to the protection of the port and city of Dublin from a visitation of the epidemic."

"That this Committee learns with surprise that the Public Health Committee considers that there is no cause of complaint in connection with the house 17 Ardee-street, from which a case of typhus is at present under treatment in hospital, and which periodically furnishes cases of this and other zymo-

tic diseases, and that the secretary be requested to communicate with the secretary of the Public Health Committee on the subject."

The deputy registrar of No. 2 District (High-street), in his last report writes that "scarlatina of a bad type is very prevalent in this district."

Dr. Cameron, the City Analyst, is delivering a course of lectures on Sanitary Science. They will doubtless be attended with benefit to those who hear them and apply their truths.

KINGSTOWN.—At a meeting of the Commissioners, the reports of several committees were read. In one a recommendation was made for the purchase of 20,000 bricks at 50s. a thousand, and 30 tons of asphalt for the use of the township. Applications were made for sewerage in the vicinity of Glenageary and Summerhill. The board declined to lay down the sewer as the property was private; if, however the usual sum of £10 was contributed by the residents, the board would undertake the work. A committee reported upon the application of Mr. Farrell, of Glashule, for permission to erect a house several feet in advance of the present house line. The committee appointed to report upon the construction of the fountain opposite the railway-station recommended a sum of £5 towards its erection. The statement of accounts showed a balance of £3,300 in favour of the board. The consumption of water within the township was 348,000 gallons daily; the pressure was stated never to exceed 40 lbs., and very little waste appeared to have taken place. A letter was read from the Local Government Board, in reply to several queries from the Commissioners as to the powers they possessed under the Local Government Act. The Local Government Board declined to answer the questions, which, they stated, involved legal questions of too nice a nature. The lengthened report of Mr. Hawkshaw on the projected extensive sewerage scheme was referred to as having been received, and its consideration deferred. The Commissioners meet again this day (Wednesday) for the purpose of confirming a resolution of the 15th ult., to proceed with a bill in the next session of Parliament, to carry out the proposed sewerage scheme.

BRAY.—At a meeting of the Commissioners the contractor of the Bray Commons-road was ordered to be paid £50 on account of work done, which the surveyor reported as progressing satisfactorily. Counsel's opinion (received through another board solicitor) was read as to the alleged encroachment of certain traders on the footway of the main street by the obtrusive exhibition of their wares. The opinion was to the effect that the Commissioners and magistrates had full power to prevent the encroachment, and recommended those powers to be exercised at once. Another counsel's opinion was also read, which stated that the erection of a lime-kiln against the will of the board, and likely to prove a public evil, was illegal.

DROGHEDA.—At a meeting of the Waterworks Company, the following report was read:—Your directors have only to report a fair and progressive state of things as regards the company. The reservoirs are in excellent condition. The supply of water has been ample throughout the year, and the expenditure upon the works has been limited to the regular and stated expenses of the necessary staff. There has been an increase in the rental of about £68 on the year, which has necessitated an outlay upon pipes and fittings to the amount of £75 upon capital. Your directors would now be in a position to declare a dividend if the original capital had been sufficient for the works. Your directors have to congratulate the shareholders upon the very healthy state of the town, which all concur in attributing (under Providence) to the excellent quality and full supply of water from the works. The chairman, in the course of his observations, in moving the adoption of the report said:—There is one circumstance, however, which I must say I deeply regret, and that is, that no means have been devised for supplying the poor of this town with pure water. It is very far from creditable that this supply should be at their doors for the past six or seven years, and yet they left unprovided for. I don't know who is to blame, but I do know that this company are not, and should like to see some agitation got up to compel the local authorities to a sense of their duties, because there is no other town in the kingdom where the poor are left without an ample supply of good water. What will the Drogheda Corporation say to the above? We believe they are in the same predicament in regard to fund—as our Dublin one, and are equally ready at promising. When the water-works of Drogheda are able to afford a handsome dividend to the shareholders, perhaps we will then be hearing of a move on the part of the Corporation to "take it over" like the gas works purchase movement in other quarters. Perhaps before any dividend is declared, the purchase question will be

raised, and the supposed losses recouped, by saddling the costs on the backs of the ratepayers. In either case, we hope the poor will gain an ample supply of pure water.

BALLYMONEY.—In respect to this town, the local journal *apropos* to the election of the commissioners, says:—"This year's rate is low enough, and the people are willing to pay it. The footpaths are in decent order, and no person's neck has been broken by reason of projected or extracted pebbles. The sewers are doing their duty. There has been a plentiful supply of good water at all the fountains. Unless some valiant ratepayer throws off his coat and trailets on the street in true Donnybrook fashion, we do not see any prospect of a local *mélée*." Ballymoney may be congratulated if all this is true. It is a pity that Ballymoney should ever stand in need of money, or commissioners to spend it. Go a-head, Ballymoney!

LURGAN.—The Town Commissioners are reported to have tabooed the question of political "Home Rule," but that is none of our concern. We trust, however, that they will not taboo the question of "Home Health," and that their earliest attention will be given with a view to the sanitary improvement of the town.

BELFAST.—The Blackstaff, like the Liffey and the Puddle, is still neglected, and in the Carrick Hill neighbourhood there are lanes, courts, sewers and dwellings in an odorous and dilapidated condition. Surely the "Northern Athens" has public spirit enough to purge and purify itself, and that too without polluting the Lagan.

WICKLOW.—At a meeting of the commissioners, the question of the water supply of the town came on for consideration. The secretary read the engineer's report which recommended—"That a tank be constructed at Ballyguile, capable of containing 25,000 gallons or upwards, to supply four or six fountains, as may be hereafter decided upon, to be done by contract, and that the opinion of a competent engineer be taken as to the most desirable site and dimensions." He had examined the place pointed out by the committee, and he had delineated the position of the tank on the accompanying drawings. The limit of the present intended supply was stated to be to the extent of four to six fountains, placed in High-street and Main-street. It was speculative to mention how much would be drawn from these four fountains, but allowing for the existing means of supply to be kept up, the demand from the proposed fountains might be averaged at the lowest at four gallons per individual, or 4,000 gallons per day. His estimate for the entire completion of the works, as designed and laid out, but exclusive of any payments for land or other liability beyond what should be paid to a contractor, amounted to £690. He had made more extended observations in the locality with a view of selecting the site he considered most desirable, that was, to place the tank in such a site as would contribute to and form part of a larger scheme for the supply of the whole town. Taking, as a basis, a supply of water to a population of 4,000, the quantity to be sought for; at 20 gallons per individual per day, would be 80,000 gallons, requiring a storage reservoir with a capacity for holding ten weeks' supply, or 5,600,000 gallons. A site for such a reservoir could be obtained very near that proposed by the commissioners' minute. By constructing about 700 yards of a catchwater drain for bringing the streams and springs of the Ballyguile district into this reservoir, a catchment area of 100 acres could be easily secured on lands entirely in the power of the commissioners, which would certainly yield 24 in. of available rainfall per annum, equal to 52½ millions of gallons, or, with sufficient storage, would supply at the rate of 143,000 gallons per day, and meet all the requirements for a town of 7,000 inhabitants—the water being of the purest description, and free of any contamination from buildings. He begged to submit his opinion that it would be preferable to expend the outlay required for the scheme in carrying out part of the complete scheme, and put the town in possession of a tolerably good supply at a cost of about £2,500. Mr. Wynne said that he had no doubt but that the larger scheme, as suggested by the engineer, would be adopted. The chairman said he had had an interview with an engineer on the subject of having the town supplied with water from Roundwood. The pipes could be laid along the country road on obtaining a presentment of 1s., and the engineer was of opinion that the expense of laying the pipes would be about £1,000. If the commissioners approved of the scheme they should at once communicate with the Dublin Waterworks Committee. After considerable discussion, it was decided that the secretary should write to the Waterworks Committee, to ascertain if they were prepared to supply

the town of Wicklow with water from the Vartry reservoir, and on what terms.

BLACKROCK.—At a meeting of the commissioners, the secretary read a letter from the secretary of the Kingstown Commissioners, enclosing a copy of the report recently made to them by Sir J. Hawkshaw as to the township sewerage, and requesting to be favoured with the views of the Blackrock Commissioners on the question. A discussion ensued. The chairman said he had read the report attentively, and they had only to do with one paragraph of it—viz.: "Also, in order, if possible, to facilitate the conclusion of some arrangement with the other districts, I may inform you that the proper plan would be for each district to contribute in proportion to the rateable value of the property drained, assuming, of course, that this value is arrived at on the same basis, which can readily be done. And as regards organisations, the governing bodies would consist of a drainage board, elected by and from each township." What the Kingstown Commissioners wanted to know was, would they enter into an agreement with them now to make use of their proposed drain, the scheme being precisely the same as they had. He thought that they should have nothing whatsoever to do with it. They could do very well without the enormous expense which was contemplated last year. If they assisted the Kingstown Commissioners in Parliament they would make use of the west pier, as a means of drainage, which would cost them an enormous sum. He did not believe that any enormous system of main drainage was wanted for Blackrock Township. He believed they would be able by degrees to do everything that was required without raising their rates beyond what they were. On the motion of Mr. Ferguson a resolution was passed to the effect that the Blackrock Commissioners do not at present deem it expedient to adopt the suggestion contained in the report which had been sent to them. At the annual meeting of the above, the report submitted stated the sanitary committee have continued to devote their serious and anxious attention to every matter connected with the preservation of the health of the inhabitants. The Alliance Gas Company are supplying gas for public lamps at 4s. 6d. per 1,000 cubic feet. The surveyor's report stated, the several works in connection with the repairs, scavenging, and watering of roads, the construction of crossings, kerbing, and sewers, the lighting and repairs of lamps, works for Vartry water and sanitary purposes, have all been executed within the estimates. The roads, footpaths, fountains, lamps, water mains, and fittings are all in good order. The lanes and courtways are perfectly clean and free from nuisance. The contractors are making satisfactory progress in portions of the main drainage scheme which is now being carried out." The chairman in moving the adoption of the report added that the state of the township was satisfactory, there had been a very considerable increase in the valuation, which, of course, added to its prosperity. The several works connected with the main drainage were in progress, and the people's park question was almost settled, and he believed the work would be commenced immediately. The most important act done by the Commissioners lately was the placing of the township under the Local Government Act. He believed nothing could have given more satisfaction to the ratepayers. In the first place it would make the board extremely particular, and take them out of the hands of gentlemen who had recently added a very large sum to the law costs of the township. No doubt all this had been effected at very considerable expense, but he believed not a single shilling of the law costs could have been avoided, and all the township had to do in future was to avoid law and law costs in every possible way. The chairman also expressed regret that the ratepayers took so little interest in the proceedings, there not being a single representative of them present.

GALWAY.—How long will the "City of the Tribes" remain in its present filthy condition? The local authorities should make an effort to cleanse the streets, or they will find the Local Government Board, or the Irish Executive, stepping in to do the work one of these days, and saddling the town with the cost. The Local Government Board may say it will suggest or direct nothing, but we advise the Town Commissioners not to wait until matters grow intolerable, or they will find that there is a power that can compel the work being proceeded with, and the Galwegians will have to pay the piper.

KILRUSH.—This town, in several respects, is much in the same unsatisfactory condition as Galway. It wants pure water and plenty, and clean thoroughfares. The state of the workhouse is a scandal to those concerned in its management as far as its sanitary condition is concerned.

ASPHALT: ITS NATURE AND USES.*

(Continued from page 269.)

AN extensive stratified deposit of real asphalt is very seldom to be found. We hear something of such a deposit in Klaproth's statements concerning Avlona, in Albania; the so-called asphalt lake in Trinidad is also known; and we are told of its presence in the Dead Sea—a circumstance, like most other East Asian products, coming as they do partly from the East Indies, partly from Aleppo, through Trieste, into commerce—of a doubtful and traditional character, like all the tales promulgated by the shippers, and not confirmed by observations made on the spot. The Greek and Roman historians commenced the fable concerning the Dead Sea by relating that asphalt floated about in it like small islands, supported by the nitre held in solution by the water; the Biblical story of Sodom and Gomorrah afterwards caused these representations to find credence; and through the whole of the middle ages and modern times the legend of the enormous asphalt deposits of the Dead Sea, as a legend, has continued. The naturalists, however, who some years since explored Palestine, have discovered that this description is at least unfitting at present, and that at long intervals, caused by earthquakes, asphalt is occasionally projected from the bottom of the Dead Sea, and is then thrown upon its shores. But this so-called Jew pitch, and in fact all the Oriental or Egyptian asphalt is very pure and expensive, and, indispensable in the preparation of certain varnishes, is entirely useless in the proper manufacture of asphalt, from its brittleness and also—its price in the market.

The asphalt lake of the island of Trinidad is far more important. This island, situated at the mouth of the Orinico, contains a real asphalt lake, more than 1,000 paces long and 120 paces broad. From this lake pitch-rivulets have flowed similar to lava streams, and formed reefs in the ocean in like manner. This lake is reached by pitchreefs and pitch-pathways, only three quarters of an hour from the west coast, exhibiting a bare black surface amidst the most luxuriant vegetation.

The asphalt is sufficiently congealed at the edge of this lake by oxydation, and also by the slow distillation of the oily matter under the sun's rays acting on the black surface. But in the centre of the lake the sun continues to fuse the mass, and it is only during the rainy season that it is possible to traverse the whole extent of the surface. Clay, from its former fluidity, has been taken up in certain quantities in this Trinidad asphalt, from which it is freed by fusion to the highest degree with bituminous oils, and allowing the sediments to settle at the bottom for removal. Another great centre of considerable production, most important for manufacture, is the island of Cuba. This is commercially termed Mexican asphalt (*Chapopote*); but it is known that it comes from the island of Cuba, and especially from the vicinity of Havana, notwithstanding that the strata have hitherto been very little known. The best hard Chapopote asphalt yet contains 27 per cent. of clay or earthy matter, as the Trinidad asphalt does, the inferior sorts having at least 35 per cent. of clay. There is, however, a very viscous mineral oil obtained thence (under the same name), which is distinguished by a very great degree of purity.

The places in which asphalt is found in Asia being left out of the question, although their topogeological history should not be neglected, we find ourselves reduced to a very few sources, the so-called bituminous shales being scarcely worth consideration, the bitumen in them not being completely formed, and rather useful in artificial blends than otherwise, the asphalt being deteriorated by their oily nature. Basing ourselves upon the foregoing classification of natural bitu-

mina, we can now proceed with greater confidence to the historical development of the industry of asphalt.

It has ever been necessary in middle and Northern Europe, owing to its variable climate, exhibiting periods of uninterrupted rain and even snow, that the inhabitants should take extreme precautions in the construction of their houses against damp and damage by water. The art of decoration offered by architecture as a means of beautifying dwelling-houses has been much impeded by this stern necessity. The Gothic system of architecture, which spontaneously arose under the influence of the Western European climate, and in which this disadvantage was kept in view from the first, has alone admitted of a free development of its peculiar architectural beauties. This system, however, is little adapted for smaller structures, and can only be applied in buildings of a larger kind.

As long as the homely citizen's house was sufficient for the well-to-do in all these regions, it was not difficult to provide for the necessities of building in these respects. But when a nobler culture and a greater degree of luxury refined the higher classes of Europe, in the era of Louis XIV., and thus increased their requirements—when houses built after the style of southern climates, together with places of amusement, were introduced, and even new forms were invented—watertight materials for roofing were required in quantities unknown in the south; and besides plates of copper and lead, the price of which was high, and which, when combined with visible portions of the structure, often destroyed every beauty, roofing and binding materials of a resinous character—the mastic preparations, in fact—were used, well adapted to resist the action of water. Strangely enough, the more eminent builders never thought of using asphalt and mineral pitch, although its existence in Europe was known, and had even been employed in some degree.

It was known from ancient authors that Babylon—the buildings of which had a renown of four thousand years—had been partially walled with asphalt; but the fact seems to have been confined to learned circles, and as it was never found in the structures of the Greeks and Romans, taken as patterns, the Babylonian use of asphalt described by Herodotus, Strabo, and Pliny, fell quite out of notice. From the statements of recent travellers it appears that Nineveh was also built with asphalt mortar, and that the asphalt mortar used in the walls of Babylon was derived from a mineral oil dug out at Is, on a tributary of the Euphrates.

The first persons who presented modern Europe with this admirable building material was a Greek physician named Eirinis, about 1712, and he subsequently distinguished himself by the discovery of mineral tar in Alsace, in 1735. In his official capacity as an expert under the Bernese Government about 1711, he visited the Val de Travers, a valley leading from the Jura mountains to the Lake of Neufchatel. Here he met with a German adventurer named Jost, who, in company with a few fellow-countrymen, had blasted from the rocky walls of this valley a heap of stone, the nature of which was partly combustible and soft, so as to be easily worked, but which, being unfit for fuel, they sought in vain to convert to some useful account. Interested by the circumstance, Eirinis examined the sides of the valley minutely, and discovered that this soft and greasy stone was everywhere to be found, and brought to light the fine quarries in the neighbourhood of Bois de Croix. What, however, was of greater importance, he recognised the utility of the stone for building, and the possibility too of turning it to technical account. He therefore addressed himself to the King of Prussia, then Lord Protector of Neufchatel, and asked for a concession of all the asphalt beds to be discovered in the principality of Neufchatel. The King referred this petition to the Council of State of the Principality, and after a careful investigation the worthy man was granted the concessions with some

few conditions. From this concession has arisen the whole of the industry of asphalt.

In the year 1712 Eirinis therefore began his labours and experiments, in order to put the proper application of asphalt on a firm basis, and induced men of recognised ability to interest themselves in such a way as to undertake buildings according to his instructions, and thus the matter gradually found acceptance and approval. His discoveries and inventions were laid down by him in several pamphlets, which do not seem to have much varied in their contents, appearing first in 1721, and then in a later edition in 1784. The fullest title of one of these is as follows:—

"Dissertation sur l'asphalte au ancien ciment naturel découvert depuis quelques années au Val de Travers dans le comté de Neufchatel, par le Sieur E. d'Eyrinis, professeur de grec et docteur-en-médecine, avec la manière de l'employer tant sur la pierre que sur le bois."

(To be continued.)

CAPITAL AND LABOUR v. THE WORKING CLASSES.

In the Economic Science and Statistics Section of the British Association, several papers were read bearing upon the question of Capital v. Labour, the condition of the working classes, and the cost of living, and other cognate subjects. Some of these papers gave rise to much discussion.

A paper was read on "Capital and Labour," by Mr. W. Morris, who criticised the principles on which trades unions were conducted. Their tendency was altogether to put an end to those kindly relations between employers and workmen which had before existed, and to create instead a permanent feeling of antagonism. The relation of a trades unionist with his employer was only that of a shop-keeper with his customer—the one being only a buyer and the other a seller of a commodity. Co-operation had been brought forward as a remedy for this antagonism; but with only one or two exceptions co-operative societies were really joint-stock companies, and in no way differed from the ordinary relation existing between capitalists and workmen. The true remedy, which he suggested, was a counter organisation of capital, so extensive as to overlap trades union organisation. The latest phase of combination on the part of workmen was the restriction of the output of coal, leading to a rise in the price of fuel to an extravagant extent, and also in the wages of the men. This increased cost of coal was painfully felt by persons who had fixed incomes. With respect to the diminution of the hours of labour which had taken place, Mr. Morris said that experience had shown, through the reports from the police courts, that greater leisure and higher wages tended to increase the amount of drunkenness and dissipation. This, he contended, would continue to be the case until education taught men profitably to employ leisure.

Professor Leone Levi read a paper on "The Effect of the Increase of Prices on certain Necessaries of Life, on the Cost of Living, and its Relation to the Rates of Wages and Salaries." On a comparison between 1863 and 1873 he found that the town artisan whose expenditure was 28s. 5d. per week, would now pay for the same articles 33s. 6d.; and that the agricultural labourer, who could then live on 14s. a week now required 16s. Carrying the same principle to the middle classes, a family which formerly expended £200 a year now needed £230 for the same amount of comfort. But an increased cost of living was more affected by the quantity of luxuries now indulged in as compared with former years, than by any increased and absolute want of the pure necessities of life. Amongst the items which came under the head of luxuries, he mentioned extravagance in dress, especially that worn by ladies, and the effect of cheapness of travelling, of literature, as shown by the temptations offered by the twopenny omnibus, the penny paper, and also of cheap postage, items which in the course of the year amounted to a large sum. With reference to the cost in the necessities of life, if it had increased so had the rate of income, the general result being a decrease of pauperism, and an increasing amount in the deposits at the saving banks.

In the course of the discussion which followed, Mr. Braybrook, assistant registrar of friendly societies, said he believed the true remedy for the present inconvenience arising from the increase of commodities would be to live within one's income. Statistics to which he referred went to show that there had been a considerable increase in the amount

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.

of savings of the working classes that did not by any means represent the increase of incomes.

Lord Houghton expressed regret that the working classes were not better represented on that occasion. He thought too much had been said about a contest between capital and labour. As a matter of fact no such contest really existed. Every working man who accumulated anything out of his earnings at once became a capitalist. He wished it could be impressed upon such men that the only essential difference between the position of the capitalist and themselves was that the former was the distributor of previous earnings among the wage earning classes. The power of a man to spend money for his own enjoyment without doing good to somebody else was very limited, and it was his belief that the working man spent more upon his own gratification than the rich man did upon his—the only question being whether the money was spent productively or not. The whole amount of capital in this country, when compared with the enormous value of our labour, was in reality a mere nothing. If the capital of the country were distributed equally among all, in a few weeks we should see things pretty much in the same state as they were now. The appearance of society completely blinded men to the real state of things, and it was only by the spread of sound economical education that the working classes could be made to understand that capital really formed the great wage fund of the country.

Mr. F. S. Powell, M.P., said that the condition of the working classes had greatly improved of late years. Although there had been an increase in the cost of living, there had also been an increase in the amount of earnings. It was a pity that working men did not provide themselves with better house accommodation, more especially because money paid in rent was well spent.

Mr. Forster, M.P., in bringing the discussion to a close, referred to the expression of regret on the part of his noble friend (Lord Houghton), that more members of the working classes were not present. For his own part he feared that the condition of membership, a sovereign a year was enough to prevent many of them from joining the association, however much they might desire to do so. But he thought the discussion, when reported, would convince both the working classes and their friends that it had not been a one-sided discussion, and that Mr. Morris's paper had been answered not with less ability nor with less earnestness by some of the members because of the fact that they were themselves large employers of labour.

In his address, the President, Mr. W. E. Forster, in reference to the subject treated, by Mr. Morris and Professor Levi, said that these gentlemen had argued that—considering the progress of the well-being of the community—we ought to expect more diminution in pauperism than we have yet seen. There was already a diminution, and he was hopeful that it would be shown to a greater extent within a short period; “but,” added Mr. Forster, “I am rather anxious—I may be thought heretical when I say I am rather anxious—that, in our objection to the evils which accompany the poor law, we shall not go to the extent of thinking that we could do without a poor law. The objections to the poor law are evident, for they lie upon the surface. I fear it is quite true that the poor law does encourage want of thrift, and that, to some extent, it tends to deaden, weaken, or render less likely the proper performance of domestic duties. Those are strong objections and require that the reason for a poor law should not be weak. I think there is a strong reason for a poor law. I do not believe, in the present state of civilisation, that it is safe or right for any country to exist without the acknowledgment of the principle of a family—without the acknowledgment that a man shall have a right to live, and that absolute destitution should be prevented. Few of us are really aware what an advantage the acknowledgment of that principle has been to this country. On comparing the social struggles and political convulsions in other countries with those of our own, I believe we shall find that one great reason why we have got through those struggles, or why we have had reform in place of revolution has been that the large body of the people have known that that right was acknowledged—the right to live.” Proceeding to deal with disputes between capital and labour, he noticed that it had been proposed to have a league of capitalists against labourers. “That,” said Mr. Forster, “is a remedy which I should much regret to see applied. A league of labourers against capitalists has been talked about at meetings and in newspapers, but I do not believe in its possibility. But if anything would make it possible it would be a league of capitalists against labourers, and such opposing leagues would be one of the greatest calamities which could befall this country. I believe if such a contest were to take place, it would be conducted with equal reckless-

ness on both sides. The very possibility of such an occurrence as that makes me take some additional comfort from one political measure with which I have had to do. If there were anything like opposition throughout the country there would be an endeavour made by each party to clutch the power of the law—to aim at legislative measures. Something, however, has been done towards lessening the power of legislation on either side by giving the rank and file of each the protection of the ballot. Undoubtedly there ought to be perfect freedom in selling labour. That implies that there should be perfect freedom in combination. I believe there was no greater mistake ever committed than the attempt to prevent a man from agreeing with his fellow workmen as to the conditions upon which they would like to sell their labour. But there ought also to be perfect freedom to refuse to buy. In our efforts to secure that freedom, there is a danger to be guarded against. We must not try to get the law to do what it cannot rightly, or cannot, in fact, effectually do. We can make use of law to protect the Queen's subjects against bodily harm, against physical violence, but it is no use attempting to protect men against persuasion or even against moral intimidation. They can only protect themselves, and if the law strives to do that which they should do for themselves it will surely fail, and probably create among those over whom it attempts to exercise its power a feeling of interference with their reasonable liberty. Nor must we look for a remedy in exceptional legislation. Nothing ever done by the House of Commons have I so much regretted as the way in which it dealt with trades unions at Sheffield. It passed a law which said that in order to get at information with regard to trades unions in Sheffield, a commission should issue, and every man who voluntarily gave evidence before that commission should be free from any consequences of the acts he had done. What was the result? Men who had been engaged not only in plotting and planning, but in deliberate murder, came forward, and after stating all they had done, declared that the law saved them from the consequences. It did not apply only to obtaining Queen's evidence—the less guilty against the more guilty; but it applied to all that were guilty. A law which protected such men was but a paltering with the principles of law, and a compromise with murder; and I hope no such attempt at exceptional legislation will ever be repeated.

ART INSTRUCTION AND ART PREMIUMS.

We desire to remind students in this country receiving instruction in schools of art in connection with the Science and Art Department at South Kensington, that a circular was forwarded from thence, some time since, to the secretaries of the various art schools, informing them that there were six vacancies in the salaried list of students of the National Art Training School, and that the allowance granted to students from Provincial schools commences at 20s. per week. The regulations are as follow:—

“A limited number of students will be received into training as art teachers, and will receive a maintenance allowance not exceeding 15s. a week, to which may be added personal payments made in accordance with their position in the class up to an aggregate of 35s. a week. No student from a London school shall receive a maintenance allowance either as a master in training or national scholar, but he may have a personal allowance up to 20s. a week. No student will be eligible to receive such payment who has not taken the first art certificate. Irish students should qualify for this certificate in the art schools of the Royal Dublin Society, where particulars may be obtained of the course necessary for the same. These allowances will be granted for one session only. They may be renewed at the discretion of the Department according to the progress and conduct of the student, and the demand for certificated teachers. No student will be allowed to remain in training after he or she has obtained five certificates. Besides their studies in the National Art Training School, students in training will be required to give instruction in parochial and district schools, as a part of their training.”

PAINTING ON POTTERY.

While upon the subject of art, we may mention here that the Council of the Art Union of London offer two premiums—one of £85, and another of £15—to be competed for by past or present students in schools of art in Great Britain or Ireland, in which painting on pottery is taught. The subject proposed is a design for the decoration of a cir-

cular tazza; the subject and manner of treatment are left entirely to the discretion of the competitors. The designs are to be on paper, in water-colours or tempera, and are to be sent to the Society's House on any day between the 1st and 7th of May next, each marked with some distinguishing device or motto, which is to be repeated outside of a sealed envelope containing the author's name and address accompanying each design. No premium will be awarded unless the work submitted be, in the opinion of the Council, of sufficient merit. If an award be made, the Council will probably commission the execution in pottery of one or both of the designs. If further information be required as to the form and dimensions of the tazza, it may be obtained by communicating with the Hon. Secretaries, West Strand, London, or to Mr. Edward Lyne, Head Master of the Royal Dublin Society School of Art.

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood contains a very interesting article entitled “The Narrative of Prince Charlie's Escape, by one of his Companions.” The paper is stated to be a copy of a manuscript narrative of one John Macdonald, a faithful adherent and follower of the unfortunate Stuart. “The Sayings and Doings of the Recess” is another of those caustic papers on the Government for which this magazine has been famous of late. “The State and Prospects of France” is the name of another readable paper.

Frazer has an article on “Irish Orangeism, its Past and Future,” detailing some of the virtues and vices of the brotherhood. The papers on “The Indian Civil Service” and “Lombard-street” are good; the last one affords an insight into the ways and methods of modern banking systems.

Macmillan is a very good number this month, and the papers worthy of notice are those on “Petrarch Masson's Life of Milton” and, shall we say, Canon Kingsley's “Priest's Heart.” The first paper is by Miss Phillimore, who has discoursed very well on the life and writings of her subject.

London Society has a few attractive papers. “Notes on Popular Actors” is seemingly written by one who knows his theme pretty well. “The Dove's Nest” and “Chesterfield's Letters” are among the good papers. Mr. Graves turns his lyre to musings on “The Haunted Mill.”

Cornhill is both pleasant, sober, and critical. “Robert Southey” is a criticism on the merits and demerits of that poet's writings. “Young Brown” is an exaggerated story of aristocratic life. “Omphale” is a somewhat classical story, with some good points. “Jack and the Beanstalk” is a political make up, illustrating the joys and sorrows consequent to that profession. “Zelda's Fortune” is a story well told, but rather mournful in its ending.

Temple Bar has a new story by Mr. Whyte-Melville, which opens well. The following papers will be found worthy of perusal:—“Junius and Sir Arthur Gordon,” “A Line of French Actresses,” and “My Beautiful Neighbour.”

St. James's has two heavy articles on “Pauperism and Charity” and “Patronage.” “From the Earth to the Moon” is continued, and is amusing. There is also a paper on “Bermuda,” containing interesting matter.

Belyavia maintains its position for a capital supply of stories—wield, mournful, strange, romantic, wise, and otherwise. “Strangers and Pilgrims” is continued by Miss Braddon, and “Her Master” by Mrs. C. Reade. George Augustus Sala rides his hobby this month to the tune of “Robur: an Essay on the Agencies of Thirst” and “Robert the Great.” “A Russian Alliance” will amuse, and Mr. Phillips's verses on “Last Hours” will please.

The *Gentleman's* is pretty strong in stories. “Clytie,” the serial story, is continued well.

The Rev. F. Arnold contributes an amusing sketch, "Getting Back to Town." The "Thomas Walkers" and "Hand Fishing" are good papers. "Table Talk" contains some interesting literary memoranda.

In *Tinsley's Magazine* for the month we have nine more chapters of "Laura Erle," which occupy some fifty pages, or nearly one-half of it. The other papers worthy of perusal are—"Mrs. Sevenoaks' Diamonds," "Before the Lights," "Belling the Cat," &c. The poetical pieces are of average merit.

St. Paul's has three or four articles of merit. "American Houses of Correction," by Mr. E. Price Edwards; and "Mr. Tennyson as a Botanist," by Mr. Hutchinson, are very good papers.

The *Fortnightly Review* opens with the editor's vigorous paper on "The Struggle for National Education." Mr. Edward Freeman writes with a good knowledge of his subject on "The Growth of Commonwealths," and "The Philosophy of Inductive Inference" is treated in an able manner by Professor A. Jevons.

SOCIAL SCIENCE CONGRESS.

FROM the inaugural meeting of the Social Science Association, which took place on the 1st of the month, until its close on the 8th, a number of very useful and important papers were read—some leading to interesting and practical discussions.

The President of this year's congress at Norwich (Lord Houghton) in his address passed under review a wide range of subjects, treating some of them ably. As we have only space for an outline of the proceedings of the Congress, we can do little more than indicate the scope of the President's address, which embraced the following topics:—International Arbitration; the Merchant Shipping Amendment Act; High Court of Judicature; the Railway Tribunal; the Purchase of Railways by the State; Sanitary Reform; the Licensing Act; the Permissive Bill; Prisons, and Prison Organization; the Reformation Movement; the Poor Law in England; the Elementary Education Act; Endowed Schools; Trinity College, Dublin; the Universities; Competition in the Public Service; Co-operation in Trades and Industrial Employment; Law of Conspiracy and Land Laws.

Speaking of the Purchase of Railways by the State, Lord Houghton said:—"The discussion provoked in Parliament and the Press suggested the appointment of a government authority which should facilitate the combined action of different companies and assist to relieve obstacles to the convenience of locomotion and the transit of commerce. Excited by this action on the part of the government the far larger speculation of the purchase and future management of the Railways of the United Kingdom by the State had been agitated with considerable fervour. The refusal by parliament of the first large amalgamation demanded might seem to indicate an indisposition to move at all in the direction of any extensive scheme of enlarged administration; but it was not likely that a question so attractive to that class of politicians who look to centralization and state authority as a panacea for all imperfections, according to the immediate fashion of modern democracy, would be allowed to rest. On the one hand would be urged the probability of the reduction of railway fares, and the possibility of some uniform rate analogous to the penny postage, better station arrangements and accommodation, with a more liberal supply of railway servants, and an expectation of additional security to life of persons. On the other hand it might be legitimately urged that the difficulty of an operation estimated at from £600,000,000 to £1,000,000,000 might awe even the financial audacity of our time, especially as it would be necessary not only to calculate present but future profits; that there was a flexibility and adaptation to circumstances and localities in our present system which a rigid and uniform public administration would not supply; that the addition of so vast a patronage and influence to the present power of the government of the day would not be regarded without jealousy and suspicion; and that there was something in the spirit of the English people which attached it to enterprise and individual energy beyond all considerations of economy or even of unity and completeness. Whichever of these orders of thought might ultimately prevail, it was indisputable that up to this time, whatever might have been the cost of competition and the loss to individuals, the result to the country was such a network of railway accommodation as no other nation approached, and a continuous course of con-

cession on the part of the companies with the public convenience and demands."

Concerning Sanitary Reform, the President said—"No practical progress had been made on the vexed question of sanitary reform. There could be no better evidence of the exigencies and embarrassments of the present state of things than the story of the bill which Mr. Powell and Sir Charles Adderley introduced during the last session. The loss of this measure was much to be regretted. It would have given to rural sanitary authorities the powers of making bye-laws and compulsory purchase, which were now only possessed by the urban authorities, and would have enabled the local government, by order, to supersede the sanitary authority in cases of non-performance or neglect."

On Competition in the Public Service he was of opinion that the opening of it to general competition had been hailed by a large portion of the public as a wise and generous concession on the part of the governing classes in the surrender of official and private patronage. The Home Office had lately adopted it, and how long the Foreign Office would retain its limited nominations he could not tell.

On Co-operation and the Law of Conspiracy, he believed that, considering the interest that had been elicited, both in this country and the rest of Europe, by the method of co-operation in trades and industrial employments, it was surprising that it had not been more extensively applied. Whether owing to the individuality of British character or to a general habit of suspicion, not only of the gains of their employers, but of the direction of their own class, neither trade combinations nor industrial partnerships seemed likely to make any revolution in our commercial life. It was rather in anticipation than in the experience of the discontent of the working classes that the combination laws were repealed, and in the belief that the general law of conspiracy would be sufficient protection against the abuse of the power they would obtain. It was this security which it was now sought to remove, and the ill will that was exhibited to its retention was analogous to the dissatisfaction with which in former times kings and oligarchies had regarded any check on their authority. All designs, however ingenious, all projects, however generous, which rest in the violent transplantation, and not in the grounded and natural growth of the organic facts of human society would become a nullity.

In conclusion, speaking upon the Land Laws, the President observed:—"There was evidently something about property in land which peculiarly affected the imagination of mankind, but there had been in this country the hunger for the soil which had occasionally maddened foreign people. There was no greater fallacy than to believe that improvements of the land were materially checked by our present system of settlement. In these opinions we know a great portion of the people of Ireland at least will not concur. We all know the hunger for the soil that has always and still continues to exist in this country. On the conclusion of his address a vote of thanks was presented to Lord Houghton, and a similar compliment was presented to Lord Napier and Ettrick, the chairman, for his services last year.

On Thursday the proceedings commenced with the address of Mr. G. W. Hastings, President of the Council, the subject being "Prison Discipline," in the course of which he bore evidence to the invaluable features of the Irish administration introduced into England. In regard to the question of industrial labour in prisons, Mr. Hastings declared himself strongly in favour of the system, except in special cases.

In the Repression of Crime Section, Mr. O'Malley, Q.C., advocated the adoption of a system of emigration which would enable persons on leaving prisons to start life afresh, not in this country, but in a distant land, where their misdeeds would not be so well known to the community.

Mr. Serjeant Cox read a paper on "How to Punish Appropriately and yet sufficiently young persons, especially children, for Offences against the Law." Lord Houghton opposed the proposals of Mr. Serjeant Cox, on the ground that the punishment of the rod could not be inflicted with anything less of a penal and degrading character than accompanied imprisonment. He supported the reformatory scheme. Miss Carpenter took a similar line, stating that the rod had been found ineffectual in preventing offences usually committed by young persons. With regard to the treatment of girls, the necessity for reformatories was even greater in their case than in the case of boys. The discussion was continued by Dr. Mouatt, Mr. Hastings, and Mr. Barwick Baker, each of whom strongly supported the reformatory movement, as opposed to flogging.

In the Health Department of the Congress, presided over by Captain Galton, C.B., F.R.S., the first paper was by Mr. Lewis Angell, engineer and surveyor to the West Ham Local Board, the president of the Association of Municipal and Sani-

tary Engineers. After reviewing some of the chief hindrances to sanitary reform, he suggested a variety of improvements in existing arrangements. He thought too much of our legislation was permissive instead of obligatory, and that the duties of local authorities were not sufficiently precise and binding, better means being wanting to compel negligent or evasive local authorities to discharge their duties. Regulations should be more strictly enforced in order that manufactories should purify their own refuse and consume their smoke. One defect in sanitary administration was insufficiency of staff, in addition to which the local officers were, in many cases, neither properly qualified nor sufficiently remunerated or protected from those local influences which arose from ignorance, prejudice, and interested clamour. The object of future legislation should be to promote greater simplicity, completeness, and certainty, as well as to secure greater efficiency in the administration of sanitary laws by granting more independence and protection to sanitary officers in the honest discharge of their duties. Concurrently with this there was required the moral influence of a higher tone of intelligence in the constitution of local authorities, as well as better appreciation of sanitary principles by the public, without which, as the Royal Commission had remarked, no legislation could be applied with success. There were indications that the elements of natural science would, before long, form part of the curriculum of school education, and it was especially necessary that sanitary science should be taught from the lowest grade board school to the college, because the subject affected alike the welfare of the prince and the peasant.

Dr. Alfred Carpenter next read a paper in which, among other things, he urged that there should be appointed a minister of public health, and a new department, entirely distinct from the present Local Government Board.

The Department of Jurisprudence and Law met under the presidency of Mr. Joseph Brown, Q.C. Mr. H. D. Jencken read a paper in which he urged that there ought to be an assimilation between the law of England and that of other countries, especially in all matters relating to mercantile law. Mr. Dudley Field, of New York, in the course of the discussion, expressed concurrence with the views of Mr. Jencken, that there should be a complete codification of international laws. He had himself sketched the outline of such a code, and should lay his proposal before the Congress during its meeting.

In the Department of Economy and Trade, presided over by Mr. T. Brassey, M.P., Mr. R. Hamilton read a paper on the question, "What should be the general relations of employers and employed, both trading and agricultural; and are industrial partnerships advisable?" The paper and the general tone of the discussion which followed were strongly in favour of the establishment of industrial partnerships as the best means of adjusting the existing differences and difficulties between capital and labour.

In the Education Department, Miss J. Blake read a paper "On the Medical Education of Women," advocating that women should be allowed to enter the medical profession on the same terms as men. Lord Houghton expressed sympathy with the views of Miss Jex Blake, which were supported also by Sir C. Rawlinson, Dr. A. M. F. Morgan, Mr. W. Gray, the Rev. S. Steintal and others; and Miss Jex Blake having replied, the discussion terminated.

On Friday, Mr. Joseph Brown delivered an address on "Jurisprudence and the Amendment of the Law." He advocated the reform of the law, and hoped that progress would continue to be made, and that at no distant date the whole mass of English law would have undergone codification.

In the Health Section the first paper, dealing especially with Sewage, Sewage Produce, and Disease, was read by Mr. Alfred Smea, medical officer to the Bank of England, who said it was not a disposal of the sewage question for the inhabitants of a town to turn the sewage into the wells of the next village. This was a question in social science which required vigorous treatment. Sewage irrigation could not be said to be practised according to the rules of social science until it was so conducted that the earth did not become waterlogged, and until the grass was not besmeared with all the poisonous materials which sewage contains. As the sewage was supplied over a large area, all good water supply ceased.

In the Education Department, on this day, there was a conference on Female Education. Miss Reale, principal of the Ladies' College at Cheltenham, read a paper on the "Organisation of Girls' Schools," and Mrs. Grey, of London, a paper on the "Organization of Lectures and Classes for Women." Mrs. Grey, in a lengthy address, set forth the advantages to be expected from prolonging the period of the education of young women.

A large meeting of working men was held in the

evening in St. Andrew's Hall, under the Presidency of the Sheriff of the City. Lord Houghton gave a brief definition of social science, and the benefits which are likely to accrue from its earnest pursuit. Next came the Bishop of Norwich with an earnest appeal to the working classes to practise social science in their home life. Lord Napier and Ettrick followed with an address, in which he urged the importance of better homes for the working classes. Mr. Hastings, Mr. Brassey, M.P., Mr. Dudley Field of the United States, Mr. Heron, M.P., Professor Hodgson, Mr. Godwin, editor of *Builder*, and Sir H. Rawlinson also addressed the meeting on kindred subjects, and were attentively listened to and frequently applauded.

On Saturday, Professor Hodgson, the President of the Education Department, delivered his address. He said the course of passing events seemed to him to be gradually bringing on schemes more and more in harmony with the high ideal of education. On the whole, in spite of much that was discouraging, he viewed our educational progress hopefully. Sir T. F. Buxton read a paper on the "Co-existence of School Boards and Voluntary Schools." He argued that the two systems should be allowed to work side by side, and be regarded as instruments for one common end—the giving of a good education. He would not argue in favour of one system as against the other. There was no necessary antagonism between them. In working side by side their action would be one of wholesome rivalry; in every district there was a sphere of work for both—work which might be done by either, but better done by both acting together. Mr. Blake Humphrey read a paper on the same subject. Mr. G. W. Hastings argued that in every town the ratepayers should seek men to represent them on school boards who would represent less some theological view, political party, or local clique, than the high interests of education. A discussion followed on the part of several speakers.

In the Health Department, a paper by Mr. Baldwin Latham on "A Constant Water Supply," created some debate. The paper suggested a series of technical regulations, which would give a constant supply. In the discussion, the importance of keeping the waste pipes out of drains was dwelt upon. The prevention of waste was pointed out as a means of insuring a constant supply, and the question was raised of the possibility of having one quality of water for flushing sewers, &c., and another quality for drinking. Mr. Latham said that continual dripping of water would be useless to cleanse house drains with the present bad construction of sewers. Water, if applied to drains for flushing, should go with a rush, which would carry all foul matter before it. This could not be accomplished with different sized sewers. Dr. A. Carpenter read a paper contributed by Dr. Dyke, health officer, Merthyr Tydvil, on the Systematisation of Reports of Medical Officers of Health with the view of making them comparable with one another.

In the Repression of Crime section, Dr. Mouatt read a paper on "Prison Industry as the Foundation of Prison Discipline and the Reformation of Criminals." Mr. Pierce, Secretary of the Board of State Charities in Massachusetts, Mr. Rupert Kettle, and other speakers followed.

In the Department of Economy and Trade, Mr. T. Brassey, M.P. (the chairman), in summing up a discussion which followed Mr. E. O'Malley's paper on Charity Organisation, said that violent political changes would not destroy pauperism; and as to the dispensation of charity, he was afraid that the expenses of charitable institutions were greatly increased by the unwillingness of persons to give. Great harm was also sometimes done by indiscriminate giving, as he had personally experienced. There should be proper supervision, and charitable organisation would be greatly improved if men of business would give their time to the assistance of those who were engaged in work so philanthropic. Too much was at present left to officials, and therefore many charitable institutions were conducted on too costly a footing. Many of the institutions were palatial in appearance, and the official occupants were over-dressed. Charitable persons ought to give more liberally, and to fewer institutions.

THE THEATRE ROYAL, DUBLIN.

THE history of the Dublin Theatres is a chequered one, from the date of the opening of Smock-alley to its close, and from the subsequent collapse of Crow-street to the advent of the house in Hawkins-street. We want another Hitchcock, or someone who will take up the latter's "Historical View" where he left it off in 1774, and continue it to the present time. The debenture-holder and the debenture-order question may be

of some importance to the parties concerned; and in respect to the matter, Mr. W. Keating Clay takes occasion in a public letter to sum up Mr. Harris's position in regard to the debenture-holders as follows:—

"Upwards of two-and-twenty years ago the Theatre Royal was under eviction by the Corporation of Trinity College for non-payment of rent, and the interests of all parties representing the lessors, including the debenture holders' rights whatever they were, were on the eve of annihilation. The first mortgagees, or annuitants, who were Mr. Calcraft's lessors, were advised as trustees by counsel of eminence then at the Irish Bar, whose opinion is now before me, had to redeem. At this critical period Mr. Harris came forward and paid the redemption money, and became lessee of the Theatre Royal, and has so continued under short leases granted from time to time to the present, in its unbroken management, upholding its character as a temple of high dramatic art, second to none in the United Kingdom, at an expenditure amounting to several thousands of pounds, of which debenture-holders and debenture-farmers reaped all the benefit, without even contributing a single sixpence towards its maintenance, or the most trifling compliment to its lessee for his unceasing and successful efforts in procuring for them every species of dramatic amusement that Europe could produce. Mr. Harris has now contracted for the purchase of the first declared mortgagees' charge, amounting to £22,000, free of all prior incumbrances, at the nominal sum of £3,000, but which, I need scarcely remark, will not at all represent the greatly increased amount of outlay that the purchase of the Theatre Royal will involve. I have seen the most unfounded statements made with respect to what these delayed equities are, but as the matter is still *sub judice* I shall not make a single comment upon its legal aspect."

We are not debenture-holders, neither is it our intention to defend unfounded statements, or to prejudice the question involved while *sub judice*. There is a second opinion as to whether the Theatre Royal of Dublin is "A Temple of high dramatic art in the United Kingdom," and to this part of the question it is our intention to devote a little discussion as soon as circumstances permit.

NOTES OF WORKS.

Mansion at Drumquina, near Kenmare, Co. Kerry, for Colonel Columb. Mr. Thos. Drew is the architect.

Extensive wine stores and stabling for Messrs. Campbell, at rear of their premises in Upper Sackville-street. They consist of three stories in red brick, with cut stone dressings. The ground floor is of concrete; for the first Dennett's fireproof system has been adopted; whilst the upper is of 3 in. deals laid on beams. Mr. Thos. Drew is the architect.

New shop front to Mr. Richard Allen's tailoring establishment in Lower Sackville-street. It is composed of polished granite from Bessbrook quarries, Newry.

At the Ulster Bank, College-green, extensive alterations have been effected in the interior, whilst a plain and substantial front of polished granite from Bessbrook quarries, Newry, has been put in. Messrs. Thomas Jackson and Son, Belfast, are the architects.

For Mr. F. Penrose, Stephen's-green, west, two houses for business purposes have been erected from designs by Mr. E. H. Carson, C.E.

On the Clyde-road a handsome mansion and out-offices are being erected for M. D'Arcy, Esq. The materials are red brick with bands of black brick; the basement storey is of cut stone. There is a handsome entrance porch, with columns of marble, &c. Mr. Rawson Carroll is the architect.

The house 15 Lower Sackville-street is being rebuilt for S. M'Comas, Esq., J.P. Mr. A. G. Jones is the architect.

At the residence of Henry Hayes, Esq., on Orwell-road, several additions and alterations are being effected, together with the construction of new conservatories, &c. Mr. Joseph Maguire is the architect.

The banking premises of Messrs. Ball and Co., Henry-street, are undergoing a complete internal remodelling and enlargement. The new walls are of Parian cement; the ceilings coved and richly ornamented. The counters and fittings are of Domingo mahogany. The flooring will be of Portland stone. Messrs. McCurdy and Mitchell are the architects. We hope soon to be able to record that the present prison-like exterior has been transformed into something more deserving the title of "a thing of beauty"!

In Grafton-street, the drapery establishment of Messrs. Switzer and Ferguson is being considerably enlarged towards the rear. Mr. Rawson Carroll is the architect.

At Stillorgan, Co. Dublin, a mansion is being erected for Robert Smyth, Esq., with gate lodge, ornamental entrance gates, stables, &c. Mr. Holmes, architect.

For all the above, Messrs. J. and W. Beckett are the contractors.

Extensive premises are in course of erection in Limerick for the newly-formed drapery company of Messrs. Slattery and O'Neill (Limited). The site is at the junction of George-street with Brunswick-street. To the former street there will be a frontage of 75 ft., and to the latter of 150 ft. The building will be about 60 ft. in height, and will be in the Italian style. The designs are by Mr. William Sidney Cox, C.E. The contractors are Messrs. McCarthy and Guerin. Cost, about £6,000.

A movement is on foot towards the erection of a new educational institution in connection with the Methodist body. The site proposed adjoins the Centenary Chapel, St. Stephen's-green. The cost is estimated at about £10,000, of which over £2,000 have been subscribed or promised.

RECEIVED.

Report of the Committee of Science of the Royal Dublin Society on the Feasibility of Improving the Regularity of Public Clocks in Dublin. Dublin: Printed by Alexander Thom.

THIS is a very useful report, and contains some admirable suggestions respecting the regulation of time—a matter of no small importance. We will reserve, until our next, a summary and some observations.

Agricultural Statistics (Ireland). General Abstracts showing the Acreage under the several Crops, and the number of Live Stock in each County and Province for the year 1873. Dublin: Alexander Thom.

THIS is another of the excellently-compiled yearly statistics issued by the Registrar-General. In a table given on p. 5, we learn that at present there are in this country, 4,297,582 acres of bog and waste unoccupied. On the subject of Labourers' Dwellings, Mr. Donnelly reports:—"It is scarcely possible, both on social and sanitary grounds, to exaggerate the importance of improving the dwellings of the labouring classes; the Legislature has enabled the Treasury to grant loans for this most desirable object through the medium at the Board of Public Works, Dublin. According to the Census of 1871, the number of fourth-class houses in Ireland, most of which had only one room for the entire family of every age and sex, was ascertained to be very considerable, but has not yet been finally revised, and in these were living nearly half a million of persons."

The Dublin Postal Guide for this month has just been issued. Its delay has been caused by a desire that certain new arrangements for the city and suburban deliveries might be included therein. We may state that there are now six collections and deliveries daily—a boon which, we are sure, the public will not be slow to acknowledge the advantage of. The broadsheet embraces all information respecting postal and telegraph business; it is a cheap pennyworth.

THE ANTRIM IRON FIELDS.

AN interesting communication on the iron ores of the County Antrim has lately appeared in the *Mining World*, contributed by Mr. R. A. Watson, C.E., M.E. The mineral wealth of that favoured northern country stands now in a good way of being rapidly developed, companies having been formed already, and commenced operations. Speaking of some of these mineral fields, Mr. Watson says:—

"The origin of these remarkable deposits appears to be entirely due to volcanic ash and mud being discharged into one grand inland lake, dotted over with islands. These islands, having been covered to a considerable depth with ash and mud, ultimately yielded a dense growth of timber and ferns, the timber being almost exclusively sycamore (plane tree). During this period the lake bed slowly but surely gathered together those great stores of iron which were unceasingly flowing into it from its numberless feeding sources. The whole of this miniature archipelago, covering, according to Professor Hull, 800 square miles, must have been then upheaved by volcanic tumult—whose internal fires found outlet in countless volcanoes, inundating the whole district with molten basalt to the depth of hundreds of feet. The heat of this fiery mass was so great as to smelt the iron deposited in the rich mud of the lake, and cause it to run together in nodules, varying in size from the finest iron filings to that of a hen's egg. In some cases, and more especially in the vicinity of a dyke, the ore has been smelted and run itself into plates of almost pure iron, from the thickness of a piece of paper to 1½ inch. The vegetable deposits on the islands, buried in lava, now come to light in the form of lignite, at the Giant's Causeway, Ballintoy, and Killinure, and have yet to be found in many places at present unknown. Another proof of the subaqueous origin of these deposits is afforded by the circumstance that the miners frequently meet with small pieces of wood (completely charred), in the psilolite ore, and in fact I have frequently picked them out of the mines myself. The great question as to whether the ore cannot be smelted upon the spot, will, I hope, be solved in the course of another twelve months; but I look forward to this being done with compressed peat, as well as by the coal from Ballycastle or the Tyrone field—the last named, I believe, however, to contain too much sulphur, although, if deeper pits were sunk, lower beds would be found that would undoubtedly answer the purpose. When Professor Hull says, 'I have little doubt, for my own part, that the ore will be smelted on the spot ere many years are over,' he confirms an opinion I expressed in the *Belfast News-Letter* eighteen months ago, that 'before many years are over, the County Antrim will become a second Middlesbrough,' and I trust that these anticipations may soon be realised. In conclusion, I entirely endorse the conclusion of Professor Hull, that 'Never was there less cause for Irishmen to leave their country than at present, when employment is abundant, wages high, and the country growing in wealth and prosperity,' and all true Irishmen (and men of Antrim in particular) owe him their gratitude for having so ably laid their prospects before them and the public."

A TRADES' REMONSTRANCE.

AT the last meeting of the United Trades' Association, the subject of sending orders for ecclesiastical work came up again for discussion. The deputation appointed to wait on the Very Rev. W. Walsh, O.S.A., regarding the commission for the iron screen and railing for the new Augustinian Church in Thomas-street being given to the agent of a foreign house, instead of an Irish manufacturer, for execution, brought up their report, which, in effect, was that they were received very courteously by the very rev. gentleman. His explanation was that, as far as he was personally concerned, he was altogether in favour of home manufacture, and admitted the justness of the complaint, but was in ignorance of the cause which led to the complaint; in fact, he did not know whether the foreign agent's estimate was higher or lower than the Dublin manufacturer's. The matter rested with the Very Rev. Local Superior, who was now in America soliciting donations for the building fund. After a lengthened discussion, the following resolution was carried unanimously—"Resolved—That, after hearing the report of the deputation in regard to the explanation of the Very Rev. W. Walsh in reference to the order for the iron railing for the new church in Thomas-street being sent out of the country to be manufactured, we feel pained that no satisfactory answer was given, and that we have no guarantee that a similar grievance will not occur again." It was

moved by Mr. Vance, and seconded by Mr. Flanagan—"That a deputation do wait on the very Rev. N. Walsh, P.P., St. Audoen's High-street, in the interest of home manufacture." The resolution was put and carried. The chairman commented on a letter of Mr. Deady, regarding Miss Cusack's (Sister Mary Frances Clare) publications, which he (the chairman) stated were latterly executed outside the country, though, if offered for competition, could be as cheaply printed and bound in Dublin, Mr. Hennegan, as a delegate from the Bookbinders' Society remarked that it was at least three years since any of these Kenmare publications had been done in Ireland. The imprint of Ballantine, of Edinburgh, was to the "Life of O'Connell," "History of Ireland," "Life of St. Patrick," and "Ned Ruanheen"—all expensive works. Four years ago 1,500 of the "Kingdom of Derry" was done in Dublin, and where the remainder was executed he (Mr. Hennegan) could not say. It was strange to see work of this class leaving the country when Dublin houses can compete successfully with both English and Scotch. At present Dublin binders are doing work for London and even Canadian publishers, and all this because their prices were lower. Mr. J. Keegan said that he had been informed that Sister Clare was pained by the public discussions on this subject. He was sure that a little explanation from that lady would give satisfaction to the tradesmen of Ireland. On that day a gentleman called on him with a message from Miss Cusack, to the effect that she wished to put a stop to the discussion for the sake of the charity, and would, if written to, send a reply which would satisfy all.

THE LATE SIR EDWIN LANDSEER.

ON Saturday last the body of Edwin Landseer, one of England's greatest painters, was committed to its last resting-place in the Crypt of St. Paul's Cathedral, London. The brothers and sisters of Sir Edwin were his chief mourners, and the Royal Academicians and their Associates, headed by their President, mustered in full force. Her Majesty was represented at the funeral by Lord Granville, the Principal Secretary of State for Foreign Affairs. The streets were crowded, and the solemn spectacle of the great artist's funeral was honoured by all classes as a national event.

ENGLISH CHURCH-BUILDING NEWS.

Some further "restorations" are about to be commenced at the old Parish Church of Halesowen, Worcestershire, under the direction of Sir Gilbert Scott. The fresh work will include a new roof for the nave, and the chancel will also be "restored." The cost of the new work to be executed will amount to £1,500 or upwards.

The church which is being built by the Rev. A. D. Wagner at Brighton, is the subject of much discussion. It is very high, and the speciality is that it is of brick throughout, coloured bricks and tiles being mostly used for ornamentation. An immense stone cross is built into the north wall, and will, when the church is finished, top the reredos. A similar church is being built by the same clergyman on the Lewes-road.

The enlargement of Christ Church, Stoke-Guildford, is nearing completion, comprising a side tower, aisle, and chancel. The cost is to be £2,300. The architect is Mr. Ewan Christian.

St. Andrew's Church, Bath, has been consecrated. The architect was Sir Gilbert Scott. The nave is upwards of 90 ft. long, and nearly 30 broad, and the structure will be terminated with a tower and spire 220 ft. high. The chancel is 40 ft. by 25 ft., and the nave aisles, with porches, 70 ft. by 17 ft. The style is Early Decorated.

A new church in the Early English style has been commenced at Sheffield, situated in the suburb of Abbeydale. It is the design of a local architect.

At Halifax, the interior of Holy Trinity Church is undergoing a process of improvement in the way of mural decoration. The flat ceiling, 84 ft. by 54 ft., has been traced out in panels upon a warm grey ground, the

dividing bands being relieved by scroll work, and the large central ornament relieved in gold and blue. All the walls are undergoing decoration, and the ceiling beneath the galleries is also broken into panels. The various sacred emblems are worked in gold and colours.

In London another old city church—that of St. Antholm, or St. Anthony, Watling-street—is about being removed. The benefice is to be united with that of St. Mary, Aldermanbury. A portion of the money accruing from the sale of the valuable site will go towards the erection of a new church to be built at Nunhead.

HOME AND FOREIGN NOTES.

WATERFORD HARBOUR.—The Waterford Harbour Commissioners, at their monthly meeting, adopted a resolution to go to Parliament next session for a bill to enable them to impose extra tonnage dues on all foreign vessels, the Treasury having refused to advance to the commissioners the £40,000 required to construct dry docks, at less than five per cent. interest.

ACCIDENT.—A boy named Hugh Reilly, son of a plasterer named William Reilly, engaged at the new chapel, Darling-street, Enniskillen, while assisting his father, fell on evening Saturday from the topmost scaffold—about 80 feet—in front of the building, and was killed on the spot.

NEW ORGAN.—A new organ, built by Messrs. Telford, Stephen's-green, for Tipperary Catholic Church, is spoken of as an excellent instrument in every point, constructional and musical. We see no reason why good organs could not be produced in Ireland as elsewhere, and we regret to say that poor congregations are often called upon to subscribe for gimcrack instruments constructed on the Continent, with any amount of tinfoil and symbolism without the case, but as consumptive in sound as in mechanism within.

ULTRA CENTENARIAN.—Limerick has just furnished remarkable instances of longevity in the case of four persons, whose deaths are recorded respectively at the ages of 105 (Mr. Husen), 96 (Mr. Harris, the oldest Freemason in Munster), 90 (Mr. Wallace), and 85 (Mr. Wheeler). The celebrated Mr. Thom, of London, the late editor of *Notes and Queries* is a disbeliever in centenarians, but every year in Ireland some well-authenticated instances of deaths are recorded of lives beyond a century in duration. The worst we wish Mr. Thom is that he may live long enough to be convinced in his own person of the fallacy of his pet theory.

DEFAULTING PUBLIC WORKS CONTRACTORS.—At the recent Quarter Sessions for the County Kilkenny, there were Civil Bill processes heard at the suit of the County Surveyor, Peter Burtchael, Esq., against forty contractors and their sureties, for failure in building various gulleys, repairing bridges, and other presentment works of the county, within the time for which they had contracted. Decrees were given in several cases for amounts in proportion to the damage estimated by Mr. Burtchael as having been sustained by the public by the non-fulfilment of the contracts in proper time; and such as had not yet got the works completed, were ordered to get them done forthwith, on penalty of being further fined if again complained of.

OBSTRUCTING A THOROUGHFARE.—At the Northern Divisional Police Court on Saturday, Thomas Cole was charged with obstructing the public thoroughfare at Carlisle Bridge, at twelve o'clock in the day, by wheeling a ladder 40 ft. long over the bridge on a handcart, by which the thoroughfare was completely blocked up. It was illegal to convey the ladder through the streets after eleven o'clock. As the defendant appeared to be ignorant of the offence he was committing, the magistrate only imposed a fine of 2s. 6d. If, however, he was convicted of a similar offence, he would be fined in 36s. Does not X 351 deserve a leather medal with a silver ladder attached, for doing *his duty* on the occasion?

TO CORRESPONDENTS.

"UNKNOWN DUBLIN."—The sketch intended for this issue is held over.

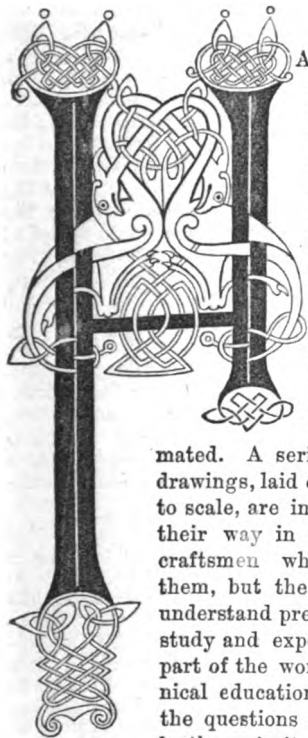
SANITARY INSPECTOR.—Do your duty, within the acts and up to the letter of the acts, and fear not. The citizens and magistrates will support you, and we will take care that the investigation into the circumstances shall not be bottled up.

THE WARD ELECTIONS.—It is outside our province to interfere with the religious or political connections of any candidate, although we must protest against politics or religion being lugged into the proceedings of the Town Council. The

The Irish Builder.

VOL. XIV.—No. 333.

The Value of Models in Architectural Design.



HANDICRAFT as well as Art needs to be studied by the use of models, and to the young architect or workman the value of a course of technical instruction, illustrated by models, cannot be over-estimated.

A series of working drawings, laid down of course to scale, are indispensable in their way in the hands of craftsmen who understand them, but the knowledge to understand presupposes some study and experience on the part of the workman. Technical education is now one of the questions of the day, but by the majority of young work-

men a great portion of it must be acquired with hard study and some difficulty from the study of drawings alone. The quick and intelligent operative carpenter, who works more in the building than in the workshop, acquires far sooner a knowledge of architects' plans, sections, and elevations, than his brother at the bench. If he has a taste for drawing, and a desire to understand and thoroughly know the routine of his trade, and its relation to other branches, the progress of the building supplies him with information that could only be acquired otherwise by the study of a model.

For the intended building operative attending classes of design in the art schools of the country or other institutes, classes of construction are needed, where their drawing lessons can be accompanied by a study of models of different portions of a public building, church, or domestic dwelling,—models illustrative of masonry and stone-cutting in all its complex branches, and of bricklaying, plastering, carpentry and joinery. No matter how well plans, elevations, sections, and working drawings are laid down and shaded, they can never teach as much in as short a time as an actual model in wood, or even cardboard, of any portion of a house. The voussoirs of an arch, ordinary or oblique; a raking moulding; a column, capital, and entablature; the stone courses of niche; a geometrical staircase, and its handrail; a dome, steeple, a spire or pyramid—all or any of these, whether executed in iron, timber, or stone, are pieces of construction that depend upon geometrical principles, and have to be put together in parts.

A shaded drawing may shew much and teach much to the intelligent and observant mind, but the model of an oblique bridge, or of a dome, niche, staircase or handrail, con-

structed to be taken asunder course by course and block by block, will teach infinitely more, as it will be understood at once. A youth may read through the whole of the books of Euclid, and yet when he enters the workshop may be unable to do more than construct a few diagrams, which he is puzzled to know how to apply to the getting out of any portions of the work that he will shortly be called upon to make. There are hundreds of building operatives in our workshops who, though they are almost every hour performing operations by the instruments of their craft in a geometrical manner, yet they are unconscious of the fact, and, if called upon, would fail in demonstrating by a drawing the principles on which their work was based. In every application of the square, bevel, compass, gauge, trammel, rule, level, or plumb-line, an operation is performed, and a combination of these operations goes to the execution of their work.

Building operatives in general, in and out of their buildings and workshops, are prone to talk a good deal about their knowledge of "lines," but the number of workmen are comparatively few who possess a general knowledge of the geometry of construction beyond the merest commonplace. What the building operative lacks, a large body of our architects also lack; and what is indispensable to the young operative, must be held to be indispensable in a certain degree to the young architect. The generality of articulated pupils in architects' offices are, on their first entry, no better informed than the young apprentices in our builders' workshops. It is no less than perfect madness and waste of time for youths to be taken into architects' offices, if they have not already some respectable knowledge of drawing, the principles of construction, the strength of materials, and possess a facility for sketching to some extent. Their first drawing lesson should not begin in the architect's office, and their calling in life should be determined upon by their parents, or selected by themselves, a considerable time before being articulated. For what are collegiate schools, art schools or institutes, or for what are even elementary schools, if they are not used to some purpose? Practical and technical education, in view of a certain calling or profession, can be imparted to the youth even in an elementary school, and much time, trouble, and needless expense can be saved, always providing that a little foresight is exercised by the parents as to the future of their children.

In every institute or art school where technical education or instruction is imparted, there should be numerous models suited to different branches of study. Architectural and mechanical drawing should be illustrated by models, and in classes of construction the science taught should be *bona fide* construction or putting together of work—not merely the drawing of it. Modelling a house and all its compartments in cardboard would be light occupation for the youth intended for the architectural profession as well as the youth intended for a building operative. Practical geometry can be taught and fully explained by the construction and use of models in cardboard as well as in wood. Every line can be laid down on paper and worked unto form by paper or transmitted to wood. The utility of a model of a building is not only confined to the shewing of the plan or elevation; but even if it were, its importance is considerable. Many buildings

erected in the present day would never have been erected in their present form if the architects of them or their owners had first got a model constructed. Destructive mistakes would have been remedied, and bitter chagrin and ruinous expenditure avoided.

The Architectural Association of Ireland have established classes of Design and Construction, to assist the young members in obtaining a knowledge of the practical part of their profession. This is good, but its success depends upon the manner the lessons are carried out. Sketching, mutual study, and criticism on the part of members, teachers, and chairman in a Class of Design must tend to improvement and benefit. The Class of Construction, however, needs something more than sketching on a black-board, and answering a series of questions on the character or characteristics of the work performed by different trades in connection with the building profession. The stone, wood, brick, and plaster work of the mason, carpenter and joiner, bricklayer, plasterer, and other trades should be illustrated by models, and the geometrical development of construction shewn from parts to whole.

Now let us take, for instance, the subject of staircase and handrail construction—a most important department in carpentry and joinery, and which, by the by, is almost entirely overlooked in the Syllabus of the Architectural Association. A sketch of a staircase or its balusters and handrail would not be a very difficult achievement even on a black-board, but then the mere sketching of the external forms would convey little of the principles of its construction in practical workmanship. Stairs are constructed in a variety of ways, and their handrails differ according to their plans; but at the same time there is involved in their construction a large amount of ingenuity and practical skill. Staircase and handrail construction is one of these branches connected with building that cannot be learned by merely looking at a drawing. True, architects do not practically put up staircases or construct handrails, though they give drawings of them; but we are certain that if architects as a body did know thoroughly the principles of their construction, we would have better staircases and handrails in what are called well-finished houses.

We could carry our observations further in illustration of our subject, but for the present we conclude, hoping that we have to some extent shewn the value of Models in Architectural Design.

IMPROVING THE REGULARITY OF PUBLIC CLOCKS IN DUBLIN.

In pursuance of a resolution of the Council of the Royal Dublin Society, passed last April, the Committee of Science have re-issued a report on the feasibility of supplying time more accurately to the citizens of Dublin. From the result of various enquiries and correspondence with the Astronomers Royal of England, Scotland, and this country, as also with the directors of some provincial observatories, the Committee suggest that some one person should establish electrical central clocks in this city as a private speculation, or that the Dublin Society should invite other bodies interested in the matter, such as the Corporation, the Universities, the Government offices, the Chamber of

Commerce, the Port and Docks Board, the Law Courts, Railway Companies, and other leading commercial establishments, to subscribe a small sum to enable the Dublin Society to issue necessary contracts, and set it going. We concur in these suggestions, as we think, unlike our own Dublin time, that they are well-timed. Nothing can be of greater importance to business men than time, and the keeping of it. All our transactions are regulated by a division of time, and often we are apparently unfaithful to our promises and obligations by the unfaithfulness of our time-pieces.

It is amusing betimes in this city to find a number of public clocks keeping their own time, and the most incorrigible tickers are those which are found in our several railway stations. They seem to be framed after the mind of the railway directors, whose property they are, and they are worthy of their owners in the matter of keeping faith with the public. Railway time is synonymous with unpunctuality, and railway collisions and railway murders are the natural sequence. To establish a regular system of controlled clocks, the Dublin Society recommend (if the work is carried out under their direction)—first, that subscriptions should be invited, amounting to about £120,* from public bodies and individuals to whom the improvement of time-keeping in this city is of interest. The subscriptions to be applied to the purchase of the normal clock and a typical controlled clock, which may be placed in view of the public at the lodge of Leinster House. Secondly, that all bodies so subscribing shall be entitled to have their clocks controlled by paying a certain annual rent to the Dublin Society. Thirdly, that the annual rent to be paid by each subscriber who wishes to possess controlled clocks shall be ascertained by dividing the current annual expense by the number of controlled clocks. It will thus be observed that, with the extension of the system, the cost of each clock will diminish. Finally, the committee are of opinion that, when a considerable number of clocks shall be embraced in the system, the annual expense of each will be found to be very small.

These recommendations are excellent; but will the public bodies and leading commercial establishments subscribe to them? We fear to a very small extent will there be any response. The Rotundo, Post Office, Custom House, Bank of Ireland, Trinity College, and the Corporation Clock at the City Hall will jog along, keeping musical time, some slow and like the "Dead March in Saul," and others to double quick time, like the "Fox Hunters' Jig." When again we have Protestant clocks and Papal clocks, Presbyterian clocks and Quaker clocks in our leading commercial establishments, and in some of our *soi disant* clockmaking firms, which seem to be regulated by religious fits of the tic douloureux, and each keeping an orthodox time of its own, and spurning the heterodox ticks of their neighbour, it will be difficult to establish an understanding amidst such discordance, and something like compulsory measures would seem advisable.

Dublin time has always been "racy of the soil," and regulated on the principle of what's everybody's business is nobody's business. Illustrations are hardly necessary;

but Mr. Sharpe, who makes an appointment at eleven a.m., finds, when he arrives at Mr. Sharper's establishment at that hour, that that very punctual gentleman has just gone out, and the hands of the clock in his firm mark 11.15. It may have been the fault of Mr. Sharper's clock, or Mr. Sharper was not prepared to pay his little account, and regulated his clock by his principles.

The Astronomer Royal of England states that the time signals received from the Electric and International Telegraph may be confidently relied upon, as giving correct Greenwich time to one-tenth of a second of time, if the state of the sky has permitted observations to be made at Greenwich. He is also of the opinion that the best instances in the world of regulated clocks are those at Liverpool and Glasgow. The Astronomer Royal of Scotland says the system (Bain's, as improved by Jones) has been growing in favour for the last twelve years, and in Edinburgh they have in daily use all the clocks began with in 1861, and have added others from time to time. The Astronomer Royal of Ireland is perfectly willing to give time signals to Dublin from the Observatory, if all necessary arrangements are made which would enable him to do so. He considers the system which has been adopted at Edinburgh very perfect.

No public body should keep up a public clock, or no corporation particularly should exhibit what is termed a Town Clock which keeps incorrect time. Its first cost and that of keeping it in repair comes out of the pockets of the citizens, therefore its accuracy should be insisted upon and rendered compulsory. This can only be done in respect to all clocks by such a system as that recommended by the Royal Dublin Society.

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.
OLD MICHAN'S-STREET.

WHEN "Dublin Bridge" in its glory stood the chief connecting link between the north and south of the Liffey, Old Michan's-street was still comparatively young and redolent of bright memories. With the advent of Sir Humphrey Jervis's new bridges over the river (the first Ormond and Essex ones) came the knell of anguish to the fat traders and merchants that had waxed strong and haughty on the borders of Oxmantown and in the suburbs of Stonybatler, Grangegorman, and Glassmanogue.

Poor Old Michan's-street has been for very many years burdened with woes, and emasculated with a dead weight of dirt, crime, wretchedness, and rags. Almost in vain has the voice of religion been raised, and the force of the law been applied, to rescue this quarter; but the social cancer that germinated long since in the slums has blossomed in the street, and paternal corporate authority or christian benevolence are exercised here but little for the salvation of the body, without which the salvation of the soul is impossible. Ruin and dilapidation had set in markedly out and about here in our early boyhood days, but the shadows of to-day are tenfold deeper, deadlier, and ghastlier. Vice walks the pavement; sloth leans against the house-fronts; crime conspires in the cellars and garrets; while honest poverty starves in the shade on one meal a-day, and hides its shabbiness on Sundays! Withal, there is some robust life and wealth left in the street yet, and men who can draw a handsome cheque upon their bankers. These are mostly the successors to predecessors in the same line of business, the representatives of trades that once flourished here, but that do little more now than vegetate.

Our memories, however, do not carry us back sufficiently far to draw a picture of this locality, even as it existed in the days of the Irish Parliament. Eyes that have seen are preferable to ears that have heard, and when reminiscences are enhanced by information transmitted from grandsire to grandson the story is worth hearing, so we will let the "Oldest Inhabitant" speak.

"When I first knew Old Michan's-street, sir, it was a very business-like and respectable thoroughfare, and its lower portion was resorted to by a throng of business men from both sides of the river. The carriages of the gentry were not sparse, and many were driven through the neighbourhood. There was a good traffic from north to south, for citizens loved to pass over the old bridge still to the public courts and ancient market-places on the south. Before the close of the last century, and for several years in the present, Old Michan's-street could boast of a number of flourishing firms, representing various trades and manufactures. Many wealthy wholesale merchants had extensive establishments here. Among the list of prominent lines of business carried on, and for a long period indigenous to this street, were: printers and booksellers, founders, iron-mongers, edge-tool makers, pin-makers, watch-makers, brush-makers, silk manufacturers, timber merchants, seedsmen, starch and stone blue manufacturers, and any number of grocers.

"The great interest, sir, of this street centred around its ancient church, which is a very old and most interesting ecclesiastical structure. It is a cruciform building, but the square tower you see is modern compared with the body of the building. The inscription on the front tells that it was repaired in 1828. The supposition that this church was founded by the Ostmen previous to the erection of Christ Church Cathedral, I believe to be an unfounded one. This parish was erected into a prebend of Christ Church in 1554 by Archbishop Brown, and it comprised the whole of the north of the city until about 1697, when the parishes of St. Mary and St. Paul were taken from it.

"In Speed's map of the city in 1610, we have evidence of what a very small portion of the north side of the Liffey was built upon at that period. In fact, sir, the buildings at that time consisted of the lower portion of Old Michan's-street around the church, the Old Inns-court, and portion of Molly's-lane and Pill-box-lane and smaller bits of other adjoining courts and lanes. A few straggling buildings existed outside this boundary, stretching to St. Mary's-abbey, which was the furthest extent of what was known as Ostmanstown. From 1610 to 1763, the north city extended from where we are standing until it embraced portions of the Mall, Big-Tree-street, Tyrone-street, Old Garden-square, Lower Gabby-street, and Somers-hill, some particulars of which I have already told you.

"This old church had a very fashionable congregation in the last century, and the churchyard and vaults were used for places of interment by many distinguished Dublin families. It is a long time since I have been inside; but, if I remember aright, on the south side of the communion-table was the figure of an old knight or abbot, but who it represented no one could tell. I remember also seeing against the wall of the south gallery the Leitrim arms suspended, several of which family are deposited in the vaults underneath.

"The stone with which this church is built appears to be the common black building stone of this county. Rutty, in his 'Natural History of Dublin,' makes mention of a stone supplied from the noted quarry of Cursis-stream standing upwards of a hundred years in the old church without scaling. I am of opinion that a good deal of the stone from that or a similar quarry composed the building. The Cursis-stream stone from the best part of the quarry was very hard, and was considered little inferior to marble. Chimney-

* Since the above was written, the Council have resolved—
"That a sum of £120 be placed at the disposal of the Executive Time Committee to provide the proposed normal clock and other apparatus, and for a portion of the expenses of the first year."

pieces were formerly manufactured from it in this city.

"Several years ago the antiseptic properties of the vaults of this church attracted considerable attention and some investigations on the part of chemists, but of late years the curiosity seems to have died out. Bodies were to be found in these vaults (which were deposited, it is stated, centuries previous) in such a state of preservation that their features could be discerned, and the bones and skin nearly if not quite perfect. In entering these vaults several years ago no disagreeable smell was to be detected, and the bodies, when viewed, exhibited a similar appearance to one another, and were all of a dry and dark colour. From a statement published by a clever chemist in this city early in the present century, it appeared that the floor, walls, and atmosphere of the vaults were perfectly dry, and that the walls were composed of a stone peculiarly calculated to resist damp or moisture. No intestines or parts containing fluid matters were to be found in the bodies, the conclusion being that these parts decayed shortly after interment. A nun who died upwards of a hundred years of age, after thirty years of interment here her body exhibited no signs of putrefaction. The coffin had crumbled away, but all, with the exception of the hair, was in a good state of preservation. The bodies of some Roman Catholic clergymen, which were upwards of fifty years in these vaults, were also in a perfect state. The old appeared to resist putrefaction better than the young. There was the case of a lady who died in giving birth to her child. She was deposited in one of the vaults, with the infant in her arms. The infant soon putrefied and dropped away, while the mother became like the rest of the well-preserved bodies in appearance and colour.

"You ask me can I explain the antiseptic properties of these old church vaults in Michan's-street. There are many opinions, sir, held upon the subject. Putrefaction can be checked in different ways, if certain conditions exist. Three of the principal conditions which favour putrefaction are—first, a certain degree of warmth; second, air; and third, moisture. The preservative conditions are cold and the exclusion of the air. Whatever tends to abstract the moisture from a dead animal, bird, or plant, favours its preservation. There are a number of chemical antiseptics, such as alcohol, nitre, alum, salt, creosote, arsenic, corrosive sublimate, sulphate of copper, and chloride of zinc. Some of these chemical agents may exist in one form or another in connection with these vaults, and contribute their quota in preserving the bodies of the dead. In the last century, sir, and early in the present, there were numbers of our citizens who believed that it was the sanctity of the religious persons buried in these vaults that contributed to preserve them and others around from corruption.

"Many of the tombstones in this ancient graveyard have crumbled away, and not a few of them were interesting. There is a monument here to the memory of Dr. Lucas, whose statue (executed by Edward Smyth) may be seen in the whilom Royal Exchange. Lucas, sir, was the first physician in Ireland who sat as a member Parliament. The tomb placed over his remains will tell you by its inscription that it was a tribute of remembrance by one of his fellow-citizens and constituents, Sir Edward Newenham, Knight. The venerated patriot was born in 1713, and died in 1771.

'Lucas: Hibernia's friend, her joy, and pride,
Her powerful bulwark, and her skilful guide;
Firm in the senate, steady to his trust,
Unmoved by fear, and obstinately just.'

"There are some sad memories connected with this old graveyard. A number of persons implicated in the rebellion of 1798 are buried here, tombless, and many of them quite forgotten. Among the most noticed and remembered are the brothers Sheares and that really remarkable man Oliver Bond. The latter's place of business was for many

years at 18 Bridge-street, where he was known as a prosperous woollen-draper. It has been asserted by some that Robert Emmet is interred in the old graveyard in Michan's-street, but on what authority I know not, except it was from the fact of an uninscribed tomb being in the churchyard. Some lines, written or supposed to have been written on the grave of Oliver Bond, appeared in the *Dublin Argus* in 1845-6. They were from the pen of the editor of that journal, J. M. C. Brady, who shortly afterwards emigrated to America. The poem entitled "The Uninscribed Tomb," in relation to Emmet, appeared originally in the *Dublin Comet* forty years ago, and was the composition of a Mr. Kennedy. The decapitated bodies of the unfortunate brothers Sheares were laid in the vaults of the old church, but being exposed near to the entrance they decayed soon after, the action of the air hastening their putrefaction.

"Let us move onward. This is the more modern portion of Michan's-street we are now standing in, and yet in dilapidation and dirt it appears the older and the more decayed. The old chapel which stood yonder, and which is now being demolished, was erected by the Capuchins. It was a very commonplace edifice as far as architectural style was concerned. The altars within were adorned with paintings of the Crucifixion, the Virgin and Child, and St. Francis. Upwards of half a century ago the Friary Chapel was in a state of dilapidation, but a very energetic Capuchin Father (Rev. P. Keogh), by his powerful appeals to the wealthy portion of his congregation, was enabled to raise sufficient funds to put this chapel in somewhat decent order. It was reported that in the space of two years, by his efforts and appeals within this chapel, he raised the handsome sum of £1,500, chiefly collected at sermons. This clergyman was afterwards translated to the united parishes of Howth and Baldoyle, but continued to pay frequent visits to the scene of his early efforts, and render a helping hand to the Order in their labours to raise the funds for their mission.

"Notwithstanding the repairs and additions which were made from time to time, the old chapel still continued a most jejune and unsuitable ecclesiastical structure. Some time since it was resolved to erect a new edifice more worthy of the mission, and steps were taken to carry it out. I have hopes, sir, for the sake of architecture as well as of religion, the new building will be an ornament to our city, although it will be situated in a poor district. The new building which we now see erecting is from the designs of Mr. J. J. McCarthy, and, like all that architect's works, will be in the Gothic style.

"Old Michan's-street, I should have observed, is represented still in one of its indigenous trades—that of iron-founding, forging, and casting; and many bells, for churches and other purposes, and agricultural implements, have been manufactured in this street. The trade lives to some extent still in the hands of Messrs. Murphy, Vincent and Son, and Sheridan. In the days of the Irish Parliament the noted foundry of Patrick Poudenon existed at 26 Old Michan's-street; this foundry was represented afterwards for several years into the present century by J. Poudenon and Son, at 47 Bridgefoot-street.

"The narrow gut or entrance from Pill-box-lane to Old Michan's-street was a curious passage through which a vehicle had scarcely room to pass. It was flanked with a number of small shops on either side of traders and manufacturers of various kinds. By the erection of the addition to the law courts and kindred offices, it was swept away some years ago. The western side of new Record Building now occupies a portion of the lower end of Old Michan's-street and the narrow lane alluded to; and the author of the "Hibernian Nights' Entertainments"—a series of racy sketches which delighted the readers of the *University Magazine* forty years ago—is now Deputy Keeper of the Records in yonder building. I hope he may live to become one

of the oldest inhabitants, for his own sake and that of Celtic literature.

"In speaking of trades and businesses that were formerly carried on in this street, I forgot to mention, sir, that for many years was issued 'The Gentleman's and Citizen's Almanack' at No. 1 Michan's-street, corner of Inns-quay. With this little volume was usually bound 'Wilson's Dublin Directory,' published by William Wilson, Dame-street. The Almanack was originally compiled by Samuel Watson, bookseller, 71 Grafton-street, and printed for him and Thomas Stewart, bookseller, corner of Inns-quay. Some years subsequent 'The Gentleman's and Citizen's Almanack' was compiled by John Watson Stewart, and was bound up with Wilson's Dublin Directory, which was printed then by William Corbet, of Sycamore-alley. As years passed on, passing down let me say, from 1818 to 1830, the Gentleman's Almanack at this period was issued by Stewart and Hopes, 3 Inns-quay, but still bearing the name of 'Watson's Gentleman's and Citizen's Almanack' (as compiled by the late John Watson Stewart). The Directory, which still continued to be bound with the former, was still printed by William Corbet, but at 5 Palace-street. It is needless for me to allude to Thom's huge Dublin Directory of to-day. Compared with a little lilliputian issue of Samuel Watson and William Wilson of nearly ninety years ago, the comparison would be as the mountain to the mouse. We should not, however, sir, forget how much we are indebted to the early labours, anxieties, and struggles of Samuel Watson and William Wilson. We may smile at their little volume, but they were the pioneers who paved the way, and left examples for others to follow. Watson and Wilson belonged to the old school whom the world is too prone to undervalue now, although its advanced civilization is owing to the labours of such and such-like men. There are other matters having a connection with this street which I would like to mention, but time presses, and I know I will stand excused for to-day."

Darkness fell upon the streets ere we lost sight of the river, and parted, on our way home, with the "Oldest Inhabitant."

ARCHITECTURAL ASSOCIATION, LONDON.

The opening meeting of this association took place on Friday evening, 24th ult., at Conduit-street. Mr. Edward J. Tarver, A.R.I.B.A., delivered an address and distributed the prizes to the successful students in the Class of Design, whose drawings decorated the walls. The display of pictures and objects of interest was less than last year. The sketches of the magnificent chateau of Pierrefond, near Compeigne, recently restored by M. Viollet le Duc, at a cost of 200,000 f., for the late Emperor Napoleon III., and of the unrivalled donjon, or circular keep, of the chateau of Courcy, 200 ft. high and 100 ft. in diameter, with walls 21 ft. thick, built by Enquerland III. in the thirteenth century, by Mr. R. Phené Spiers, were notable. An excellent syllabus of papers to be read during the ensuing year was circulated among the members of the association.

LOUGH OUGHTER DRAINAGE.

It is expected that operations will be commenced here next spring. A correspondent writes:—"If the Erne and its tributaries were also taken in hand and improved, according to the wish of the farmers, who are sufferers from annual inundations, and the canals from Belfast to the Erne, and from Ballinamore to the Shannon, were rendered navigable, arterial communication between Belfast and Limerick and the intermediate district would be complete, and an important public benefit would be conferred on the commercial, trading, and agricultural interests of the country."

No doubt this is true. The plan, sections, and schedule of those drainage works were prepared by Mr. James Brady, the engineer to the works, by order of the Board of Works.

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

[Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

We now propose, in further elucidation of our subject, to accompany George Semple through that portion of his treatise which more particularly relates to the building of stone bridges in large fresh-water and deep tidal rivers, and of constructing roads through or erecting forts and other weighty buildings in "quaking bogs or morasses." Among his twelve practical propositions are several which at this day are suitable for adoption, both in relation to works in fresh and salt water, and some of his methods could be well grafted on more modern ones with advantage. As we cannot produce his plans illustrating his coffer and modes of construction, we confine ourselves to the reproduction of some of his useful and practical observations.

STONE BRIDGES, AND THEIR FOUNDATIONS.

"Make yourself thoroughly acquainted with the bed of the river on which you intend to work. Some, you must be sensible, are hard, some soft, some partly consisting of both; some are very smooth and even, and others may have large rocks or tumbling stones, &c. You must therefore make a firm resolution never to sit down to design the bridge, nor to consider the construction of your coffer, till you have most carefully tried and searched diligently into the bed of the river, which you may easily do by the methods formerly directed, let the depth of the water be what it will in moderation. And when you have collected and figured down your soundings and borings, you may proceed and consider the gross dimensions of the bridge, and the construction of your coffer.

"But I may venture to establish one general rule concerning bridges in particular—i.e., to proportion the bridge to the depth of the water; as, for instance, if the water be three fathoms deep, your coffer must be 19 ft. high and at least 18 ft. broad in the clear, and it will stand as firm as a cube. And you must adhere closely to Palladio's rule, which is, 'that the foundation must be as thick again as the wall intended to be raised upon it'; but you must by no means follow his next direction—'to make the foundation wider in soft, loose ground'—for that would make the bridge quite preposterous; but you must strengthen the soft ground with piles to such a degree as may bring it to an equality with the rest of it (as I did at the two northerly piers of Essex Bridge). I say, if the water is 18 ft. deep, your coffer must be at least 18 ft. broad, and consequently the pier 9 ft. thick, which will admit of an arch of 54 ft. span; and it is my opinion (with submission to some eminent gentlemen) that the breadth of a bridge should be determined by the height alone, or that the whole bridge taken together must bear some analogy to the depth of the river, for the higher the superstructure the greater extent the foundation requires."

[If Semple lived in these times he would be indeed surprised to find a number of modern engineers paying very little heed to the conditions laid down by him, or indeed by such men as Alberti, Palladio, Scamozzi, Serlio, or others. Neither in height nor breadth is there any analogy with the depth of the river spanned, or the roadway crossed, as in the case of railway bridges. The bridge builders of the eighteenth century, like their ancient predecessors, were fond of giving their bridges over rivers a bold sweep, whether the level of the streets or the level of the water demanded it or not. They seemed to have an aversion to building flat bridges, or of keeping down the crowns of their arches to something near the level of the roadway. Their arches were mostly a semicircle or a segment, and they were not given to adopt the elliptic curve. Unlike the modern bridge builders, the old school were compelled to work in timber or stone, and of both materials some of them have construc-

ted bridges which might be used for models for all time. With few exceptions, our iron bridges of to-day are hideous examples of bridge construction in design, notwithstanding the mechanical principles on which they have been planned.]

"Suppose that for some particular purpose you are required to calculate and to make a just return of the daily quantity of water any small river may produce during the summer season, observe then that previous to that calculation you are to make strict enquiry and make yourselves thoroughly acquainted with several parts and places in that river, and in all these parts and places to take correct sections and plans thereof, on which you are to lay down your depths or soundings, strictly observing the surface and declivity of the bed, and the declivity and irregularity of the banks, and note the friction that arises from these greatly contributes to lessen the celerity of the water.

"The thread—that is, the middle of the current—of the river runs the freest, and is the least retarded by those obstacles; and that thread, especially during the time of a fresh or land flood, is always to be found nearly over the deepest parts of the river, and those deepest parts are very variable, and produced according as the declivity and circumstances relative to the bed and banks may direct, and in dead or slow-running water this thread cannot be discovered by the eye; and therefore, for these reasons I say, you are to make yourself thoroughly acquainted with all the parts and places where you intend to take the velocity or celerity of that water; that is, how far it runs in some certain stated time, which is done by straining two parallel ropes or lines across the river at certain distances from each other, strictly observing how many minutes or seconds a bit of cork or some other such light matter will take to run a certain space, which you ought to try near each bank, and also in the middle of each of those parts or places of the river, also strictly observing whether or no they are hastened or retarded by the wind; and so, after summing up all together, you may be enabled to calculate the true velocity on an average, and thereby compute and measure the cubical feet of water that you may reasonably conclude to pass through and may be produced by it in the time required, making rather large allowance for waste, &c.

"There have been numerous persons involved in very serious and disagreeable circumstances, both of private and public natures, on the credit of such calculations as these, especially where they have much exceeded the truth, and thereby destroyed or rendered hopeful schemes abortive that might perhaps otherwise have been attended with private and public utility. Hence, also, you may conceive some useful ideas concerning the motion and velocity of rivers in general; but distinguish and remember that rapid land floods roll down and principally act from the surface to the bottom in all deep rivers, and that when a flood tide flows into the mouth of a river over a shallow bar, it operates from the bottom to the surface, by damming up and totally overpowering all the fresh water that comes within its influence."

[Having given plans and modes of construction for laying a quick and cheap foundation for the piers of a large stone bridge in a tidal river, in the middle of which there are six fathoms depth at low water, the tide sometimes rising four fathoms more, with the bed of the river hard and rocky, Semple observes:—]

"Let us now compare small things to great ones. We are very well assured that Apollodorus completed Trajan's Bridge within the summer of one year of our Lord 104, and that the ten outward piers were built on artificial foundations, made by wheeling in vast quantities of large and small stones, and other filling (perhaps like the stuffing so much used by the ancients), but by all my industry I could not find out by what other methods he made the foundation in the middle of the river. Now, if I was to presume to enter the list of conjecturers along

with some great folks, I would conclude that the methods he took to build the inner piers were to rise or bank up the bed of the river (of which you shall hear further), and to set such coffer as these thereon, and thence proceed with the stone work as usual (and I have already told you where to find the true methods, which he must have actually have taken) and if the foundation of one pier can probably be carried up to low water mark in a fortnight, could not twenty such sets of men do twenty such pieces of work in the same time. And if so where is the wonder that Trajan's numerous army completed that work in that time? Nor need you be afraid to complete such an one as we are now projecting, we will suppose of nineteen arches, even within the compass of six summer months, if there was a necessity for it and money sufficient to carry it on, provided you had sufficient time and you had previously provided and prepared everything you wanted for the purpose, before you launched your coffer."

[Essex Bridge, the work of Semple, now being demolished, was completed in a little over two years, in 1755. Considering the times, and that everything had to be thought out, designed, and provided by the architect according as the novel circumstances of the case demanded, the time occupied in the building of the bridge was small. There was considerable difficulty experienced by the architect, as we have already shewn in former papers, in laying the foundation of Essex Bridge. The new bridge now erecting will be provided with ready-made foundations; and, as iron will supplant stone in the elevation, with the aid of modern appliances, the public ought to expect that the intended structure would be completely finished within a year, inclusive of preparations. But, will it be finished in that time? Well, as far as we are ourselves concerned, we are not inquisitive enough to ask the contractor his opinion. This much we do know, that a pressing necessity exists for the opening of the new bridge, and the sooner the structure is completed the better, provided due attention be paid to the character of the work. It appears that Semple was called upon at one particular period by the corporations of Derry, Wexford, Waterford, and other places to furnish them with some idea of the cost or of the plans he would suggest for erecting bridges over the principal rivers of these towns. If not actually commissioned to furnish plans, he at least undertook the labour of viewing the sites of the intended bridges. His suggestions to the corporations of these towns relative to the required bridges are embodied in his treatise, and some plans are given, which he believes are suitable to meet the wants of the above towns. Speaking upon the subject of these intended bridges his remarks plainly shew that the execution of stone bridges at Derry, Wexford, and Waterford, at the period he speaks of, were beyond the means of the corporations of these towns.]

ON STONE AND TIMBER BRIDGES IN IRELAND, ETC.

"The conciseness of this work, and not being able to procure proper sections of these rivers, prevented me laying them down particularly, nor have I formed any design exceeding six fathoms low water; but I hope they most clearly point out methods for building in much greater depth. As, for instance, let us suppose a river of 50 ft. deep at dead low water, and let us examine after what manner our general rules must conduct you to draw designs for that depth. The principle which directs 'that the coffer should at least extend to a cube of the water they stand in, and the size of the bridges ought to bear some proportion to the depth of the water in which it is to stand.' Now, if the water be 50 ft. deep, the coffer must at least be 50 ft. broad, the naked body of the pier 25 ft., and consequently the arch must span 150 ft. I grant that such a span would not by any means answer our poor country, because the expense would rise in-

finely above anything that we could have the least hopes of accomplishing."

[Sempie goes on to show how artificial foundations can be procured by raising the beds of the river; and, after detailing the means and the materials by which the depth of the water may be reduced, and cheap, strong, and useful bridges built, proceeds to give plans for a cheap and substantial method for constructing a bridge. The method embraces a substantial temporary bridge with stone piers, the arches (or the spaces between the piers) are of timber, the river rising at some spring tides to ten fathoms deep. The plans suggested by Sempie for constructing timber bridges, or a combination of timber and stone, was not carried out in the above towns, but at a later period (towards the close of the last century) timber bridges were erected at Derry, Wexford, Waterford, and New Ross, some particulars concerning which we will presently afford.]

(To be continued.)

THE ROYAL HISTORICAL AND ARCHÆOLOGICAL ASSOCIATION OF IRELAND.

The quarterly meeting of this association was held on Wednesday, 15th ult., at Butler House, Kilkenny.

MAURICE LENIHAN, Esq., M.R.I.A., in the chair.

The following were elected:—As Fellows—James H. Owen, M.A., Pres. R.I.A.I.; John J. O'Callaghan, F.R.I.A.I. As Members—The Most Rev. Dr. Hendricken; D. Mercier, Esq.; Commander E. W. Hawes, R.N.

VANDALISM AT CLONMACNOISE.

The Rev. James Graves said he was sorry to say that a most wanton injury had been inflicted on some of the ancient Irish inscribed monuments at Clonmacnoise. It would be recollected that the ancient vaulted chapter-room of the Cathedral had been furnished with an iron gate, and the most interesting and fragile of the monuments placed therein for their better preservation. Would it be believed that this gate had been forced, and some of the monuments broken, and others carried away? He was glad to say that in this case ample apology was made, and the abstracted monuments restored. But no apology could repair the injury done to two of the monuments. He had thought it necessary to get printed a number of handbills for circulation amongst parties visiting Clonmacnoise, of which the following is a copy:—

"All visitors of right feeling and good taste will admire, without injuring, the ancient remains here preserved. Should any there be not so minded, they are warned that the law (stat. 24 & 25 Vic., cap. 97) provides that whosoever shall maliciously destroy, damage, or carry away any sculpture or monument exposed to view in a burial-ground, or elsewhere, are liable, if adults, to imprisonment and hard labour, and, if under 16 years, to imprisonment and whipping."

THE REPARATION OF MONASTERBOICE ROUND TOWER.

Mr. Graves reported that he had inspected the works in progress at Monasterboice. He was not quite satisfied with what the local committee proposed to do, and had suggested changes, which he trusted would be carried out. Ultimately he hoped that the round tower and magnificent crosses there would be considered national monuments under the 25th section of the Irish Church Act, and placed under the care of the Board of Public Works.

THE PRESERVATION OF GLENDALOUGH.

Mr. Graves had further to recall to the recollection of the members present the admirable report on the state of the churches, round towers, and other remains at Glendalough, read at the July meeting, 1870, by their late lamented Fellow, Dr. J. A. Purefoy Colles. That enthusiastic lover of our country's national monuments had, under the sanction of this association, and just

before his return to India, exerted himself to collect a sum of money for the conservation of those most interesting and valuable remains, and that with some measure of success, for he had obtained the sum of £66 5s. 6d., from which, when Dr. Colles's expenses in postage, &c., were deducted, a balance of £54 10s. 1d. remained in the hands of the treasurer of the association. This sum it had been intended to reserve for the time when Dr. Colles should return to Ireland, to carry out, so far as this small sum would, his project of careful repairs and conservation. But, alas! that time was not to come. Dr. Colles was cut off by brain fever, at Calcutta, in the January of this year. In the meantime he (Mr. Graves) had learned that the Commissioners of Church Temporalities in Ireland had an intention, under the provisions of the 25th section of the Irish Church Act, to make an order vesting the ruins, &c., at Glendalough, in the Board of Public Works, and had called on that body to send in an estimate of the sum required for the purpose; and he was so fortunate as to be able to meet Mr. Owen, their architect, at Glendalough last July, and had inspected the ruins with him. If the recommendations made by Mr. Owen were successfully carried out, a careful conservation (not "restoration") of the ruins of the former Seven Churches of Glendalough would be effected. Before it was known that this State measure of conservation were likely to be carried out, Sir William Wilde, having had his attention directed afresh to the locality by his labour in editing the Memoir of Gabriel Beranger, for the July number of the "Journal" of the association, became anxious that something should be done for the preservation and clearing out of the ecclesiastical remains in the Valley of Glendalough, and he (Mr. Graves) was disposed to recommend the committee to add the Colles Fund to whatever sum Sir William Wilde might collect for that purpose, always with the proviso that proper supervision should be provided whilst the work was in progress. But when it became likely that the public funds would be available for the purpose, it seemed to him undesirable to expend the small sum collected by Dr. Colles on an imperfect attempt at conservation, and he would refer the question to the meeting as to whether it would not be better to reserve the money, so as to be enabled to supplement, if desirable or required, the work of Government; and, if this were found to be unnecessary, whether it would not be advisable to obtain permission from the subscribers to expend their contributions on some kindred object. He should add that he was informed by Sir William Wilde that he, in conjunction with the Rev. Eugene Clarke, P.P., of Glendalough, had removed the trees which were injuring the Trinity and Rhefeart churches, and had excavated their areas. This was a good work, which every lover of antiquity would appreciate, whatever else might be done by other parties.

DONATIONS.

In addition to the publications of various learned societies laid on the table by the hon. secretary, was a rare work, viz., "Four Letters on Several Subjects to Persons of Quality, by Peter Walsh, of St. Frances' Order, Professor of Divinity. Printed Anno 1688." Presented by the Rev. W. R. Blackett.

The fragments of a large number of fictile vessels exhumed from the pagan cemetery of Dromakilly, Co. Fermanagh, as described in the paper of Mr. W. F. Wakeman, read at the last meeting, and printed, with numerous illustrations, in the number of the "Journal" for July. It is much to be regretted that the fragile nature of those *fictilia* rendered it impossible to deposit them entire in the museum. Presented by Mr. W. F. Wakeman.

A Peruvian burial vase, with the figures of a warrior on one side in high relief, brought home by Captain Eastman, of the ship "Atlanta," from Peru, where it was found in the cutting of the railway through an ancient cemetery. Presented by James Budd, Esq., Waterford.

Specimens of mortar and plaster from Mellifont Abbey. Presented by the Rev. George H. Reade.

A thumb-flint, or scraper, picked up by the donor in the Valley of the Baird, Co. Antrim. Presented by the Rev. James Graves.

The blade, 6½ in. long, of a bronze dagger without the point, found at Pallen Strand, Enishowen, close to the spot where the valuable gold torque was found last year; a very beautiful white flint arrowhead, of the barbed variety, 8 in. long—a most beautiful variety of the art of chipping that material,—found in the townland of Dunluce, Co. Antrim; and two small clay tobacco-pipes of the seventeenth century—one found in digging near Inch Castle, in the island of Inch, Co. Derry, the other in Somersetshire. Presented by Thomas Watson, Esq., Londonderry.

The chairman exhibited a very curious bronze antique, being apparently the pommel of a sword. Such remains are very scarce, but there is in the museum of the association the bronze pommel of a dagger of apparently the same age. Mr. Lenihan also exhibited a brass ornament of the '82 Volunteer uniform, and two bronze spear-heads—one of them a very fine one of the late bronze period.

A SOUVENIR OF THE RAPPAREES.

The chairman also gave an interesting account, which he illustrated with sketches, of a discovery made by a farmer named Michael Andrews, at a place known as Laibana-Digh (i.e., the thieves' bed or cave), in the barony of Ownney and Arra, in the Co. Tipperary, within a mile of Ballina, Killaloe, in 1838. It was an artificial cave 24 yds. long by 12 ft. wide, lined with framed timber—all the purest black bog oak, apparently of primeval construction; but the tradition of the country was, that it had been used as a place of concealment by the celebrated "Galloping Hogan," the rapparee, and his gang. In the cave, which has since been quite destroyed, were found some wooden shoes, *temp.* James II., and a large wooden ladle.

ANCIENT SEPULCHRAL URNS.

Major Wemys, Danesfort, sent two very perfect fictile vessels found some years since on his property, as detailed in a communication made to the association by the Rev. James Graves at the September meeting, 1860.

Mr. Graves said that he had on that occasion described a very curious vase as seen, with others, by him at Danesfort, which was not only covered by fine surface ornamentation closely resembling that observable on our ancient gold antiques, but which had the rare if not unique accompaniment of a cover with a loop handle at top. When some years after the late Lady Elizabeth Wemys deposited in the museum three very curious fictile vessels, found near the earthwork which gives its name to the townland of Danesfort (correctly Dunfert, "the Dun of the Burial Place"), this urn was supposed to have been lost; it has only recently been found by Major Wemys laid by in a press, accompanied by another vessel of elegant form, carved with moressed ornamentation, and enriched by a row of knobs running round its neck.

CURIOUS BRONZE SPEAR-HEAD.

The Rev. James Graves said that he had purchased for their museum a very fine bronze spear-head, which he laid on the table. It measures 8½ in. long, and had loops at the sides. What made it remarkable, besides its elegant form and fine preservation, was the occurrence of engraved ornamentation, in the form of a lozenge, on the loops, and of contiguous lines round the socket. It was found in cleaning up a drain in Carrowkeel bog, near the Glebe House of Clonmacnoise, King's County.

The following papers were submitted to the meeting:—

"Loca Patriciana, No. IV.—Bilingual Ogham Inscriptions at Killeen Cormac": by the Rev. John F. Shearman.

"The Memoir of Gabriel Beranger, and his Labours in the cause of Irish Art, Literature, and Antiquities, from 1760 to 1780, with Illustrations": by Sir William Wilde, M.D.

The usual vote of thanks having been passed to donors and exhibitors, an adjournment took place till the first Wednesday in January.

SECOND SESSIONAL MEETING OF THE ARCHITECTURAL ASSOCIATION OF IRELAND.

In submitting their first annual report, or rather the report of the proceedings of their first session, the committee of the Architectural Association of Ireland accompanies it with a programme of their intended work for the session of 1873-4. All things considered, the young association is entitled to commendation for their past labour, and the efforts made by them in this city to raise the status of their profession, and improve the practice of their art. Infants generally creep before they walk, and we are adverse to seeing or encouraging any abnormal methods being used to force an unnatural activity or development. The members of the new association are comparatively few yet, and the funds at their command small, but both can be largely increased if the line they have marked out is energetically, faithfully, and practically pursued.

Eight ordinary and three extraordinary general meetings signalled the first session of the association, and nearly a dozen of papers were read, some of which we published according as they were delivered. The committee reports that the Class of Design during the past session was well attended, but that the sketches sent in might have been more numerous. They hope that the junior members will not be deterred from sending in sketches from any fear that they will be subjected to severe criticism, their object being to impart instruction, and to facilitate the acquirement of accurate knowledge in the art of design. The committee also reports that, although well attended, the Class of Construction during the past session did not fulfil their expectations. The mode to be pursued in relation to the Class of Construction will, therefore, somewhat differ in the session of 1873-4. The "visits" to buildings and works in progress were not well attended during the last session, but it is hoped that an improvement will be observable in future. The committee trust to be enabled, in the session now commenced, to have a science class, under the direction of a tutor of Trinity College.

The Class of Construction for the present session will embrace the study of the following subjects under a variety of heads:—masonry, carpentry, bricklaying, joinery, plastering, slating, plumbing, painting, glazing, iron-work, foundations, damp, surveying, and quantities.

Among the subjects for prizes for the present session are essays on the "Influence of Pugin and Ruskin on Modern Architecture," "Keltic Ornament," and the "Art-Education of the Architect." Prizes will also be given for best measured drawings of any building in Ireland up to the nineteenth century. In the Class of Design, for best series of sketches made during the session; and in the Class of Construction, for best paper on six subjects considered by the class during the session.

There are a number of judicious rules and regulations laid down in relation to members and matters belonging to the Association, which we hope will be sustained. As the funds of the young Association are small, we join in the wish that contributions may be forwarded to enable the committee to award larger prizes. Artists, architects, merchants, and independent gentlemen, whether allied to art or architecture, might aid in this laudable direction. The papers to be read during the present session will embrace the following subjects:—"Concrete and Fireproof Construction," by James H. Owen; "Ornamental Design," by Thomas

H. Longfield; "Architectural Details in Common Use," by E. Trevor Owen; "Specifications," by W. G. Doolin; "Technical Education," by Charles H. Brien; "Modern Developments of Church-Planning among different Religious Bodies in this Country," by Thomas Drew; and "Our Street Architecture," by Thomas Holbrook.

It was our intention to make some further remarks on the nature of the mapped-out work of the Association for the present session, and point out some omissions in their constructive programme which it would have been well to have included. This, however, and other matters which the report of the Association suggests, we will notice from time to time hereafter. Elsewhere in our columns some remarks will be found bearing upon the subject in one important direction.

THE LATE JOHN CAMERON.

A CLEAR-HEADED, deep-sighted, friendly, and persevering Scotchman has passed from amongst us. Irishmen of all classes and creeds owe him not a little for his services to literature and to the development of our industries. He may thank but very few for his deserved success, as it was the result principally of dogged resolution and self-exertion. Where he succeeded, hundreds have failed, and in failing worked incalculable mischief to the cause and interests they espoused.

Shortly after the establishment of the *General Advertiser*—upwards of thirty years ago—John Cameron's name was associated with the publication of a little native periodical, of which the country is still proud, although it lived only to the end of the first volume. The *Irish Penny Journal* of 1840-1 had associations which enhanced its value even beyond the admirable matter it contained. Among its contributors were—George Petrie, its topographical leader; John O'Donovan, Martin Doyle (the Rev. Wm. Hickoy), H. D. Richardson, William Carleton, C. Mangan, John Keegan, Edward Walsh, Thomas Ettingsall, Mrs. S. C. Hall, Samuel Lover, and others. Petrie, O'Donovan, Doyle, Lover, Carleton, and one or two more, had previously broken ground in the pages of the *Dublin Penny Journal* and the *Irish Penny Magazine*, published between the years 1832-6. Nearly all of the above writers, with whom Mr. John Cameron must have been acquainted, are in their graves—some upwards of twenty years, and others recently. We remember well with what regret we read the announcement in the last number of the first and only volume of the *Irish Penny Journal*, that its publishers intended to issue it no more. It had a fair circulation in this country, and when it was stopped it was increasing among the Irish residents in the chief cities and towns of England and Scotland.

Mr. Cameron took a very active and prominent part in the struggle for the repeal of the obnoxious "taxes on knowledge," and was honorary secretary to the association started in this city to abolish the paper duty, and received the thanks and commendation of the English association for his labours. He took an active part also in the agitation for the abolition of the compulsory stamp on newspapers.

The history of the establishment and working of the *General Advertiser* in Dublin, which was started in conjunction with Mr. Gunn, would form a most interesting chapter in the story of the rise and progress of journalistic enterprise in Ireland. Besides the *Advertiser*, Mr. Cameron was proprietor of the *North British Mail*, a successful and well-conducted journal, published daily in Glasgow, and which has a weekly issue that enjoys a large circulation as a family paper. The *North British Mail* has been for some years under the conduct of Mr. Cameron's son, Dr. Charles Cameron. In 1853 the *Exhibition Expositor* was published by Mr. John Cameron. Its articles were well written, and the publication effected much good in connection with our Exhibition in that year.

Up to the 8th of last month Mr. Cameron's health and spirits seemed to be as well as they had been for years past, but on that day he was attacked with apoplexy from which he did not rally, but expired on Wednesday, the 22nd ult. Mr. Cameron had reached his sixty-ninth year, when his death terminated a most useful and active life—a life which ought to serve as an example to many, as it shows how success and fortune can be achieved despite the most adverse and discouraging circumstances. The remains of Mr. Cameron were interred in Mount Jerome Cemetery on Saturday last, with every mark of respect on the part of distinguished and influential citizens who knew him through life. In the soil of his adopted country, peace to the ashes of the friendly and industrious Scot.

"One in name and one in fame
Are the world-divided Gael."

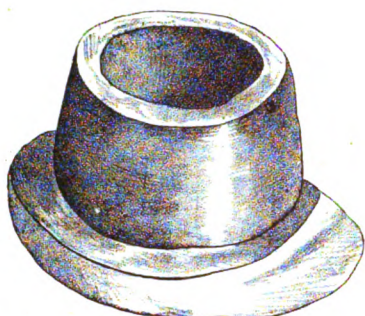
THE LATE SIR ROBERT M'CLURE, C.B.

On Saturday, 25th ult., was buried in Kensal Green Cemetery, the remains of the renowned Arctic Explorer, and the discoverer of the long-sought North-West Passage. He was born at Wexford in 1807, and was educated by General Le Mesurier, who adopted him as a son, so he took the name of Robert John Le Mesurier M'Clure. Passing over his early years and first appointment, we may notice he was made in 1848 first lieutenant to Sir John Ross's expedition that went in search of Sir John Franklin and his crew. On returning to England in 1849, he was promoted to the grade of commander. In 1850 he set out again in search of Sir John Franklin, being appointed second in command to a expedition under Captain Collinson. The "Investigator," M'Clure's ship, parted from the "Enterprise," commanded by Captain Collinson, in a gale of wind, in the Straits of Magellan, and never met again. The "Enterprise" was unable to enter Behring's Straits, and to proceed to Hong Kong; but M'Clure succeeded in getting through and reaching Kotzebue Sound. He was met afterwards by Captain Kellet of the "Herald," and directed to return; but M'Clure proceeded on his own responsibility. Beset by ice, he doubled Capes Bathurst and Parry; and discovered land upon which there were large mountains and verdant valleys, which he named Baring's Island. Subsequently he met on Prince Albert Island a race of aborigines, who never hitherto held any intercourse with Europeans. Finally, sailing up Prince of Wales's Straits, he penetrated Barrow's Straits, and into the Atlantic Ocean, thus discovering the North-West Passage in 1850. On his return to England he was knighted, and received a reward of £50,000 for his services.

The funeral, which was conducted in the plainest manner, consisted of the hearse and three mourning coaches, followed by only two private carriages, namely those of Lady Franklin, widow of Sir John Franklin, and Rear-Admiral Sherard Osborn, C.B. At the cemetery a number of friends of the deceased officer joined the funeral cortege, which proceeded direct to the chapel, when the burial service was read by the Rev. Charles Stuart, who afterwards concluded the service at the mouth of the grave, situate at the north-west side of the cemetery, in the rear of the chapel, a short distance from the graves of Admiral Jno. Erskine Douglas, Lieutenant-General Hastings Fraser, and Commander John Wood, R.N. The elm coffin was plainly mounted, and the plate on the lid bore the following inscription: "Sir Robert John Le Mesurier M'Clure, died 17th October, 1873, aged 66." Among those who were present to pay their last tribute of respect to his honoured memory were Sir Alexander Armstrong, K.C.B., Medical Director-General of the Navy, Captain J. Woon, R.M., and Mr. Nelson (the "boy" of the expedition), all of whom served under Sir Robert when he commanded the "Investigator;" Rear-Admiral George H. Richards, C.B., Hydro-

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— ANCIENT IRISH FONTS. —



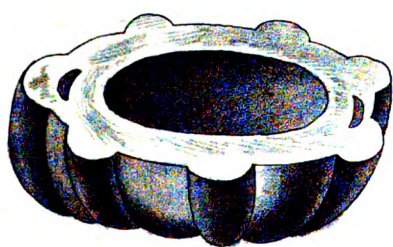
— BALLYNEANIG CHURCH. —
— COUNTY KERRY. —



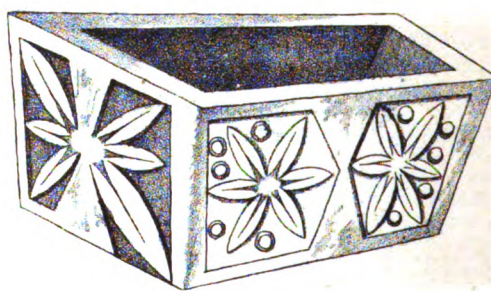
— OLD FONT AT FORE CHAPEL —
— COUNTY WESTMEATH. —



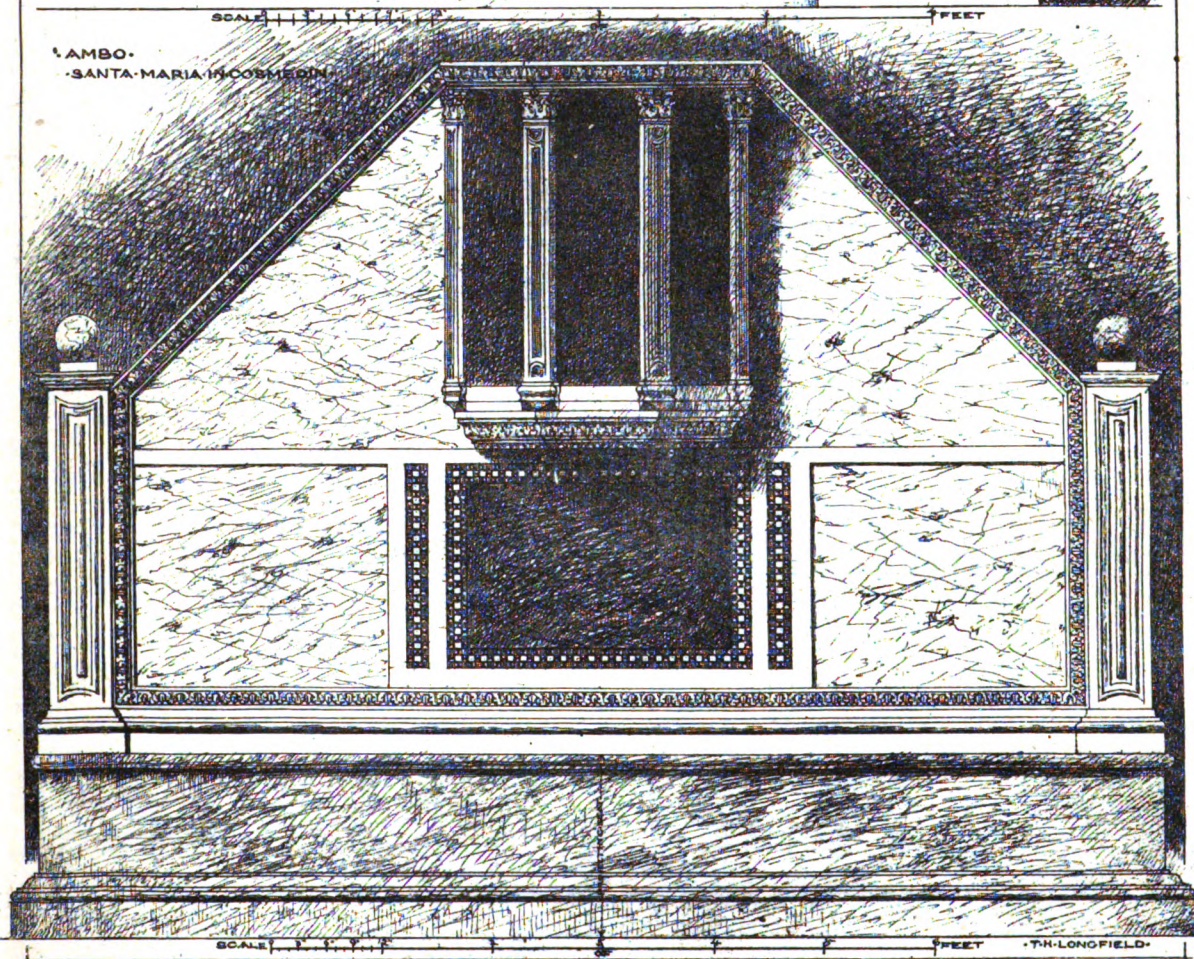
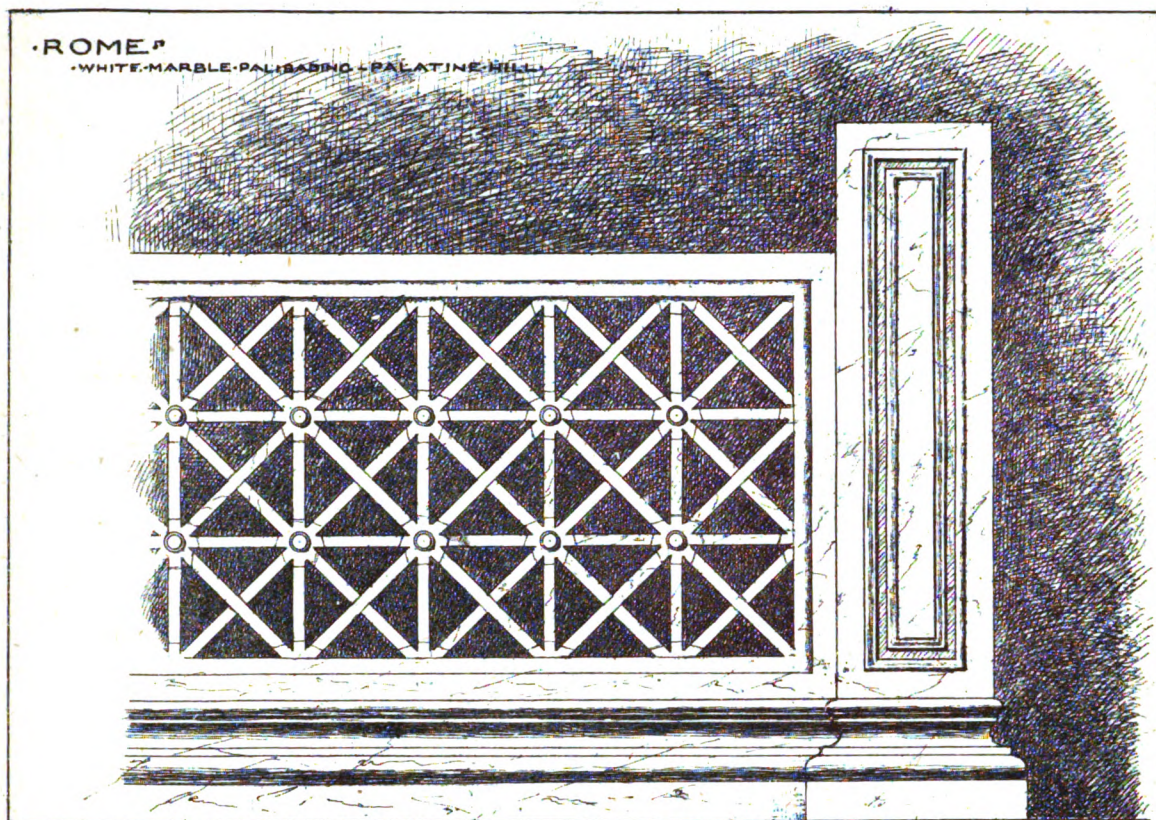
— FONT FROM KELLS —
— COUNTY KILKENNY —



— GRANITE FONT OLD CHURCH —
— OF FAITHLEGG —
— COUNTY WATERFORD. —



— FROM BALLYBACON —
— OLD CHURCH. —
— COUNTY TIPPERARY. —



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grapher of the Navy; Rear-Admiral Sherard Osborn, C.B., Rear-Admiral Sir F. Leopold M'Clintock, Knight, Vice-Admiral Richard Collinson, C.B., Vice-Admiral Erasmus Ommanney, Rear-Admiral Sir John C. D. Hay, Bart., C.B., Sir Bartle Frere, Captain Allan Young, and Captain Bedford Pim, by whose "gallantry, perservance, and judgment," when lieutenant of Her Majesty's ship "Resolute," Captain Sir E. Belcher, Captain M'Clure, and crew were rescued from destruction, and whose gallant conduct was honoured by the approval of the Parliamentary Select Committee appointed to inquire into the circumstances connected with the discovery of the North-West Passage. After taking a last look at the cold earthly resting-place of their departed commander and friend, the mourners slowly dispersed.

Since the above lines were penned, Lady Franklin has been advised, or thought it advisable, to dispute the claim of the discovery of the North-West Passage accorded so long to Sir Robert M'Clure. Lady Franklin's husband is dead, and now Robert M'Clure, the gallant Wexfordian, is in his grave. Were he not a mere Irishman we would not see so many attempts made to deprive him of his honour. Until we can see some more authentic documents than those spoken of by Lady Franklin, we will respectfully decline to alter our opinion. The late president and some of the fellows of the Geographical Society have not been lucky in their dogmatic assertions in various directions. The Geographical Society did not cover itself with honour in the matter of Livingstone, and his discoverer Stanley. The latter was a mere American, but the Yankee journalist and traveller shewed that he was a man who was not disposed to let the members of the Geographical Society write him down or talk him down, and throw ridicule upon his statements. Sir John Franklin deserved honour and praise, and Lady Franklin is quite justified in vindicating any claim which she may believe has been established by her valiant husband and companion. Let us, however, first have incontrovertible proof. The following is Lady Franklin's letter:—

"Now that the grave has closed over the remains of the great Arctic navigator, Sir Robert M'Clure, it is time to dissipate the confusion which seems still to exist in some quarters as to his claim to be considered the discoverer of the North-West Passage. I beg of you, therefore, the favour to permit me, on behalf of the expedition under command of my husband, to state again the proven facts of its incontrovertibly prior claim to that distinction. No one can dispute the great qualities of Sir Robert M'Clure as a navigator of the highest skill and daring. The perilous voyage of the 'Investigator,' which closed at the Bay of Mercy, midway between the Pacific and Atlantic, has won for him a world-wide reputation. But unfortunately it was prematurely assumed on his return to England in 1854, after his rescue by the 'Resolute,' that to him belonged also the honour of being the first to solve the problem of the North-West Passage; and, as we all remember, rewards were showered upon him in due and fitting acknowledgment. But it was felt and urged by many, including my friend Sir Roderick Murchison, that future search for Franklin might reveal a priority of claim which could not be disregarded. Accordingly, on the return of Sir Leopold M'Clintock in the 'Fox' (September, 1859) we learned by means of the official record which he recovered, that in following the course laid down in his instructions, Franklin's vessels, after effecting explorations within the Arctic circle, had actually found the water way between the two great oceans precisely where it had been anticipated, and that this discovery was made at least two years and a-half earlier than that of Sir Robert M'Clure, in another quarter. The expedition had perished, indeed, for lack of the means of rescue, but it was none the less an act of justice to these martyrs to duty that their names should stand for ever in the history of their country, linked with the proud distinction of being discoverers of the North-West Passage. Accordingly, their claim was prominently acknowledged and set forth by the Geographical Society, and by the leading Arctic authorities, who individually felt, as I am aware, that justice to the dead was all the more due to their memories on account of the premature decision in favour of another. Our deep obligations to Sir

Leopold M'Clintock and his officers are thus due, not only for having ascertained the fate of my husband and his party, but for having also secured to them the distinction which they died in winning. I have in my possession from the above high authorities (including Murchison, Beaufort, Richardson, the late venerable president of the Geographical Society of Paris, all now deceased) numerous letters and documents, which have not yet been made public, testifying to this result with the most absolute precision. Not the least valuable one is a letter from Sir James Ross, who had been prominent in honouring Sir Robert M'Clure's achievements, but who, after the return of the 'Fox,' spontaneously communicated to me with noble and touching candour, and in the most unequivocal terms, that the record brought by the 'Fox' proved that the honour of the great discovery belonged to my husband's expedition, and to it alone. The printed and published testimony is already ample, and abounds especially in the presidential addresses of Sir Roderick Murchison to the Royal Geographical Society and the geographical section of the British Association."

There is an unmistakeable tendency in this sceptic age to dispute every new invention or discovery, and there are always parties to be found starting up and claiming a prior discovery. When an Irishman suddenly becomes famous there are a number of British journalists who will hail him as a countryman; but if in the case of an Englishman, we soon realise the fact that Saxon and Celt are not convertible terms.

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

ANCIENT FONTS.

THE font has always held a prominent place in the list of appliances made use of by the Church in her sacred rites, and in mediæval times all the art of the carver, inlayer, and artist was employed in the decoration of the baptismal laver. We cannot expect that the primitive Church of Ireland could preserve to us examples of richly-decorated fonts, such as we sometimes find in Continental and British churches; yet we do find, occasionally, specimens remarkable for their great age and quaint character, which have a sacred interest in the eyes of the christian antiquary.

Probably the earliest form of the font was a rude undressed block of stone, with a bowl-shaped cavity in its upper surface; these are frequently found in connection with churches of the earliest age, in remote districts, and on sites where churches once existed; they are termed by the country people "bullauns," are usually held in great veneration, and sometimes appropriated to superstitious uses. Indeed, so rude and ancient is the type of these objects, that some of our professed antiquaries have appropriated them to Druidic rites, and termed them "rock-basons." The localities and circumstances, however, under which they are found, and their peculiar formation, unmistakeably suggest their sacred appropriation. One of this class lies outside the western doorway of the principal church at Inniscaltra, in Lough Derg, on the Shannon; one is to be seen at Glendalough; also at the old church of Kiltiernan, County Dublin; and adjoining the holy well of St. Abban, at Ballyvourney, County Cork.

A more formal type, however, succeeds the rude block-bason, in which the stone was not only hollowed out, but its exterior fashioned into a circular form. A singular example of this class is to be found in the old church of Ballyneanig, County Kerry (see accompanying lithograph), where we find a rudely-fashioned circular stone vessel, standing on a saucer-shaped plinth; in the bottom of the bowl is an orifice for letting off the water.

At the church of Kilmalkedar, in the same

county, we find one of a more progressive type—a perfectly-formed bowl fairly fashioned both inside and outside. At Hore Chapel, County Westmeath, we find one which shews another advance; in this example the exterior is relieved by flat ribs of a peculiar form. In the churchyard of Faithlegg, County Waterford, we have a still more ornate and interesting example, very quaint in its type, being a hemispherical bowl ornamented with bold circular ribs.

At Ballybacon old church, County Tipperary, we find one of an unusual form—a rectangular stone cist, hollowed out in the same shape, the exterior sides and ends having sunk panels, containing an ornament composed of six leaves, radiating from a centre, and also with smaller circular discs.

In the parish church of Kells, County Kilkenny, formerly was to be seen a Romanesque font of an early date; the bowl was square, both inside and outside, fashioned somewhat like the Norman cushion-capital, and standing upon a low circular shaft, having a moulded base and square plinth; one angle of the bowl and also of the plinth was ornamented with sculpture, the carving on the other angles never having been executed. This font has been illustrated and described by the Rev. James Graves, in the *Journal of the Kilkenny Archaeological Society*, vol. 1864-6, p. 491. He states, that "the pillar was originally higher, one stone being now lost, and the bowl was intended to be lined with lead; the remains of hinges, and of a fastening or hasp, shewed that it was originally provided with a cover." He further informs us, that "it now, by permission of the Rev. C. Darby, Rector of Kells, serves as the font for the Cathedral of St. Canice, the four angles having been newly carved in fac-simile of the original ornamentation, and the bowl otherwise suitably restored."—(*Ibid.*, p. 492.) With all due respect for the Dean and Chapter of St. Canice, their restoration of this interesting relic was a piece of very questionable taste; the real interest of such an object consists in our having it in the very state in which it was left by the hands of the original workman. The re-carving of the only angle originally enriched, and the ornamenting the other angles, in what the modern workman may conceive to be fac-simile, has completely destroyed the identity of, and the interest in, the sacred utensil. I hope that such acts will meet no imitators. The accompanying drawing is taken from the Rev. James Graves's illustration.

An old Romanesque font is to be seen in the old church of Killeslin, County Kildare, and one also in that of Clady, County Meath; the latter has been removed to the garden of Mr. Bolton, a local proprietor. Many others of a similar age are doubtless to be found preserved in various places of worship through the country.

SKETCHES OF PALISADING AND AMBO, ROME.

AMONGST our illustrations with this number we present our readers with two from the City of the Seven Hills, photo-lithographed from drawings by Mr. T. H. Longfield,—one, a remnant of pagan, the other of early christian, art. The marble palisading is from the "Scavi" that have been made on the site of the Palace of the Cæsars on the Monte Palatino, where it forms one of its many great attractions, from its light and elegant design. A copy of it in metal adorns the basilica of S. Paolo Fuori le Mura as an altar-railing. The ambo is from the Church of Santa Maria, in Cosmedin. The panels of the upper projecting portion are of Egyptian porphyry, while the lower centre panel is of verde antique; white, grey, and a white marble with strongly-marked brown veins, are the other materials used.

ASPHALT: ITS NATURE AND USES.*

(Continued from page 278.)

As Dr. Eirinis is to be regarded as the true discoverer and inventor of modern asphalt technology, and as his enlightened activity in this field has prepared the present triumph of the subject, and may be regarded as its foundation, it is worth while to make the labours of this inventor known to greater circles. We cannot do this more satisfactorily than by quoting some notice on the preparation of asphalt from his above-named works, given by the mining engineer Henri Fournel, in a pamphlet on the asphalt of the Val de Travers, published in 1838:—

"The author, who, during his many journeys, extending over years, has had occasion to perfect his knowledge of all kinds of minerals, has obtained from several reigning princes, but in especial from his Majesty the King of Prussia, very extensive and very favourable privileges for the continual use of the pits discovered by him in the lands of the said princes; and as, with the aid of God, he found certain rocks in the principality of Neuchâtel, containing a veritable asphalt, in every respect as good as the asphalt of Babylon or from the valley of Siddim, so famous among the learned, and has obtained a good quantity thereof, he found it worthy to acquaint the public therewith by these few lines until he shall have published this work entitled, '*Asphaltasphaltie sive invertibilis bituminis veritas ac securitas*.'†

"As this asphalt consists of a mineral, clayey, and warm substance, which is more clammy and viscous than pitch, with fewer pores and very firm as may be seen by its specific gravity, it withstands all influences of the air, of cold, and of water, insomuch that it cannot be penetrated by the latter. It therefore is better fitted than any other substance to bind together all kinds of building work, or to be painted thereon, for it protects wood from rotteness, from worms, and generally against all the destroying influences of time, and, moreover, in such a degree that though it be continually exposed to water, air, ice, and every climate, instead of suffering from it, it becomes thereby, so to speak, indestructible. From this it is to be easily concluded that this is a natural cement, very proper for the binding together of wood, stones and other substances, used for bridges, wells, ships, and other structures exposed to moisture.

"In various parts of Burgundy, Neuchâtel, and Switzerland, the utility of this asphalt cement has been recognised by using it for cementing or tarring a number of stone and wooden buildings exposed to the action of water. The experiments have always succeeded well, and the author could, in case of need, produce a large number of witnesses to the fact. It is not to be doubted that as soon as this substance is better known in the world, all those who have the care of buildings will use it; and this not only on account of its excellence which is not inferior to, nay, surpasses all other sorts of cement, but by reason of its easy preparation, and because it is cheaper than any other artificially prepared cements. The preparation of the cement is very easy; the stone is taken just as it comes from the quarry; it is slightly heated in order to rudely break it to pieces; a small quantity of pitch is added, that it may melt more easily, and render the mass thinner; it is then melted up by a gentle coal fire.

"The wood or stone to which the cement is to be applied should be carefully dried and slightly warmed. For stone cement, until now, one pound of pitch has been mixed with every ten pounds of asphalt; but for wood cement more pitch is added. As to the degree of heat, it must be left to the work-people, who will fit the needful temperature to the nature of their work; it is enough to add here that the asphalt will become softer

and more pliable the more it is melted up, but at each fusion some more pitch must be added. This re-fusion is effected in a copper vessel containing a quantity proportionate to the work in hand.

"*Observation.*—The pitch must first be melted and the asphalt gradually mixed with it, and this mixture continually stirred with a stick or spatula until the two substances have become thoroughly intermixed. The resin makes it harder, and better able to withstand the heat of the sun. The Dutch pitch obtained from tree roots makes it tougher. The mixture should consist of one part of common pitch and eight or nine parts of asphalt, according as it is wished it should be more or less liquid. After this process, before it is quite cold, the cement can be very easily smoothed by means of a warm iron, similar to those used by masons in brickwork." Before all things the labourer should take care to cleanse the stone or other material before the cement is applied; for if imperfections be found in the work, they would arise, not from the substance thus applied, but the careless method of applying it.

"It may be further remarked that the asphalt cement used in wells, if removed after many years, may be remelted, and that this new fusion will cause it to become finer and stronger for the same purpose, the pitch which has been mixed with it previously having thus been preserved. It will not be difficult to convince the public of this fact when it is remembered that asphalt has been used for mummification, and for the preservation of other bodies more liable to corrupt than pitch itself.

"Should any bubbles be formed by the cementing of wells, or empty spaces present themselves, it is easy to remove these in places where it is visible by gently rubbing the parts with some cold substance while the matter is still warm, and a further application of a red hot iron rod, immediately effacing all inequalities, and causing the surface to become as smooth as a mirror."

These public statements on the use of his invention were supported by Eirinis by official documents, dated in the years 1716 and 1719. In the first he is informed from Neuchâtel that from 1714 to 1716 numerous cisterns and fountains of wood and various stones were all perfectly well mortared and bound in a permanent way by his asphalt, and that a platform and the floor of a granary were laid down to the satisfaction of their owners. In a second, coming from Basle, it is testified that with the asphalt cement he had so firmly united two pieces of hard rock that when thrown from the window of a very high building on to the pavement it had not separated. He had also thus cemented two portions of a pillar of 1 ft. in diameter and 4 ft. in length, and in a quarter of an hour after the process it could be lifted and carried by both ends, and, when finally cool, was thrown on the pavement without breaking. Those who are acquainted with the superior applications of asphalt cement will see nothing very extraordinary in this, but it is mentioned in order to show that Eirinis was no visionary, nor did he seek to recommend his new discovery by extravagant statements.

We learn from a note from the engineer, Henri Fournel, how admirably the disciples of Eirinis mastered the application of the material. M. Fournel relates that he had found at the house of a M. Coulin, in Couvent—one of the pretty villages of the Val de Travers, a staircase belonging to that period. All the steps of the first flight are of stone, covered with asphalt some six to eight lines thick, and these, without exception, are in perfect preservation, while the steps of the second flight, which would naturally have not been so much in use, consist of stones unprotected by asphalt, and are worn into deep fissures by the feet. This testimony in favour of the workmanship of the school of Eirinis is far better than that of the sealed documents, now long since lost. Practical men acquainted with the

art of asphalt industry cannot but remark with surprise how instinctively this skillful Greek physician seized upon the highest method of adapting the material for use, and organised it in a manner exactly the same as it is now used with all our advance in the technical arts, with the sole difference that instead of the Dutch (or really Swedish) pitch, the natural mineral tar, *goudron minéral* is now used, on account of its superior density. Like other discoverers, however, Eirinis himself reaped little advantage from thus restoring to the world a building material forgotten by it for some four thousand years. A. M. de la Sablonnière, treasurer of the Confederation, went to France to value the matter there in conjunction with the discoverer. When he had succeeded in this he neglected the originator, announced himself as the inventor, was recognised and honoured as such, and thus gained his immediate object. At his petition a royal privilege was granted him, dated the 21st February, 1720, to the effect that for ten years he should have the monopoly of importing the asphalt of the Val de Travers into France, to manufacture and to sell it without any customs' duties or royal taxes and in such manner that no merchants' guild could interfere.

Buffin informs us, in his "Natural History," that he made use of the asphalt of Neuchâtel in the Royal Gardens, afterwards the *Jardin des Plantes*, and had a large basin covered with it. He was convinced of the durability of the work, for at the time of his writing thirty-six years had elapsed, and the basin was perfectly watertight. This structure, as the records show, was completed in 1743, therefore the asphalt of the Val de Travers must still have been in use at that time. But the employment of it must gradually have declined, for in 1785 Eirinis had left the Val de Travers and Switzerland, and settled in Alsace, where, living in retirement, and fortified by his previous experience, he discovered the asphalt pits of Lobsan, which have continued to be worked to the present day.

(To be continued.)

THE EUCALYPTUS GLOBULUS, OR HEALTH TREE.

AN interesting communication was read from M. Gimbert at the last Meeting of the French Academy of Sciences. This Australian tree, the growth of which is surprisingly rapid, besides attaining gigantic dimensions, it now appears possesses an extraordinary power of destroying miasmatic influence in fever-stricken districts. It has the singular property of absorbing ten times its weight of water from the soil, and of emitting antiseptic camphorous effluvia. When sown in marshy ground it will dry it up in very short time. The English were the first to try it at the Cape, and within two or three years they completely changed the climatic condition of the unhealthy parts of the colony. A few years later its plantation was undertaken on a large scale in various parts of Algeria. At Pondook, 20 miles from Algiers, a farm, situated on the banks of the Hamyze, was noted for its extremely pestilential air. In the spring of 1867 about 13,000 eucalyptus were planted there; in July, of the same year, the time when the fever season used to set in, not a single case occurred; yet the trees were not more than nine feet high. Since then, complete immunity from fever has been maintained. In the neighbourhood of Constantina, the farm of Ben Machydlu was in equally bad repute; it was covered with marshes both in winter and summer; in five years the whole ground was dried up by 14,000 of these trees, and farmers and children enjoy excellent health. At the factory of the Gue de Constantine, in three years, a plantation of eucalyptus has transformed twelve acres of marshy soil into a magnificent park, whence fever has com-

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.
† This work probably never appeared, although a controversial article respecting the title, against an article of the *Journal des Savans*, afterwards was printed at Besançon.

* Technically, similar to plasterers' hand-floats.

pletely disappeared. In the island of Cuba, this and all other paludean diseases are fast disappearing from all the unhealthy districts where this tree has been introduced. A station house at one of the ends of a railway viaduct in the department of the Var was so pestilential that the officials could not be kept there longer than a year; 40 of these trees were planted, and it is now as healthy as any other place on the line.

Would it not be well if our Corporation were to invest a few pounds in the importation and propagation of these trees in several well known filthy districts, north and south of the river? We particularly recommend the Main Drainage and Public Health Committees to plant a few of them in the immediate vicinity of their scavage depôts. Indeed several of our leading thoroughfares would be the better of a few dozen of the eucalyptus, and would save a large expenditure on the behalf of our citizens in smelling salts and Lundy Foot's mixture.

SOCIAL SCIENCE CONGRESS.

(Concluded from page 281.)

ON Monday the proceedings of the Congress commenced with the reading of an address by Captain J. Galton, on "Health." Taking as his subject the extent to which in general building acts sanitary arrangements could be advantageously provided, the conclusions at which Captain Galton arrived were, first, that so long as so much preventable disease exists in this country we must not delude ourselves with the idea that we have done more than touch the borders of sanitary improvement; secondly, that the first step in further progress is to imbue the owners and occupiers of houses and cottages with a knowledge of the laws of health; thirdly, that to assist in disseminating this knowledge the position and emoluments of the medical officers of unions should be improved, so as to enable them more usefully to watch over the prevention of disease; fourthly, that in every town and village or congregation of houses rates levied on the owners or occupiers should be employed to provide a supply of pure drinking water within the reach of all the inhabitants; fifthly, that plans of all new habitable houses, and important alterations of existing houses, over the whole country, should be subject to a general building act, containing provisions to be enforced by the local authorities; and, sixthly, that whenever the local officer has reason to suspect that a cause of disease exists in any house in a town or village there should be a power to enter and inspect the premises, and to require the removal, at the expense of the owner or occupier, of any cause of disease found to exist.

Mr. J. Howard, M.P., read a paper in the Jurisprudence Department upon the question of "Farm Tenancies." He advocated legislative interference, in order to secure the public good. We had, he said, a limited area on which to raise the food of the people; we had a population fast growing in numbers and in purchasing power; but our fields and homesteads did not yield as great an amount of food as they could. The chief impediment to increased production was want of capital. To attract the necessary amount of capital security was indispensable. Judging by the experience of the past, and the stagnant condition of much of our agriculture, this could only be accomplished by the State stepping in, recognising the claim of the tenant to the property he might have put into or upon the land of another, and which he might be called upon to leave behind him. If they found a difficulty in feeding thirty millions of people, did it not behoove them to ask how were the wants of fifty millions to be supplied? That was a population which they might expect at no distant day to have to provide for. Mr. Heron, M.P., spoke of the working of the Irish Land Act, which he said had been eminently satisfactory. He expressed a strong opinion in favour of preserving the freedom of contract between landlord and tenant as far as possible, and contended that nothing should be done by the legislature which would involve an interference with the rights of property. In reply to a question from the chairman, Mr. Heron stated that compensation under the Land Act to the tenant was given in the first instance by the county court judge without a jury. The question of compensation only arose from the disturbance of the tenant by the landlord. Lord Houghton asked if there had been any cases of appeal. Mr. Heron said there had been appeals on questions connected with the Northern tenant-right, but none with regard to the amount of compensation. Sir F. Boileau denied that the landlords had any monopoly, and was in favour of allowing compen-

sation to the tenant, but some limit should be placed upon the amount which he should be allowed to sink in the soil. Lord Houghton believed that the existing arrangements between landlords and tenants in this country were satisfactory, and the changes of tenancy at the caprice of the landlord were extremely rare. He did not think there was any necessity for legislative interference, or that it would be advantageous to get rid of the present system of small tenant farmers for the sake of throwing the land into the hands of a few large capitalists. Mr. Holland was of opinion that the interference of the legislature was necessary in order to prevent the tenants from being plundered by the landlords. Mr. C. S. Read, M.P., remarked that the land of England was not properly farmed, and one reason was that the tenant farmer had no security for his capital. During the last twenty years there had been very little permanent improvement in farming, and he believed that so far as corn and turnips were concerned there had been an absolute falling off in the crop. He was strongly in favour of legislative interference, and in conjunction with Mr. Howard, he had last session introduced a bill on the subject. Some further discussion followed, and a paper on the same subject was read by the Rev. E. L. Blackman.

In the Health Department, Mr. H. H. Collins, architect, London, read a paper containing numerous suggestions relative to some of the defects of the Metropolitan Building Act as applied to dwelling-houses. If (he said) they examined sanitary legislation from its commencement to the present time, they would find that it had been but a series of spasmodic measures, the result, not of calm analytical reading, but of popular fears. It thus invariably betrayed a want of research and well-weighted consideration; consequently its administration was difficult, and its clauses confused and ambiguous; its objects often ill-defined, its authorities were disjointed, and acting without co-operation or harmony; the decisions of judges or magistrates were conflicting and antithetical; its legal procedure cumbersome and expensive. After illustrating these points, and suggesting many improvements, the speaker added that no provision existed for enforcing the number and areas of outlets from public buildings. The arrangements at most of our theatres and public places of entertainment, and many of our churches and chapels, were simply terrible to contemplate. An alarm of fire would involve a fearful loss of life, for which the legislature would be primarily responsible. A discussion followed. In reply, Mr. Collins stated that but a very small proportion of dwelling-houses were erected under the supervision of architects. Even where employed, they were often fettered by ignorance, apathy, prejudice, or false ideas of economy on the part of their clients.

Sir Harry Verney, M.P., read a paper by Miss Florence Nightingale, entitled, "How some People have Lived and not Died in India." The paper described with much detail the beneficial effects of sanitary improvements in various parts of British India.

The Economy and Trade Department took up the question of Friendly Societies, in regard to which papers were read by the Rev. J. Y. Stratton and Mr. E. H. Brabrook. The general feeling was in favour of an improved audit of the accounts of these societies. The holding of business meetings at public-houses was also much deprecated. Other papers were read: by Mr. Westgarth, "On the Convenience of Paper Money"; by Mr. Fuller, "On the Further Development of the Resources of the Soil"; and by Mr. E. C. Booth and Mr. C. E. Levey, "On the Preservation of Meat."

In the Education Department Miss Carpenter read a paper on "How can Education be brought to bear on the hitherto Untouched Portion of the Population?" She shewed that, notwithstanding all the provision made by the Government and by private individuals interested for the protection and education of young offenders and destitute children in reformatories, certified industrial schools, and workhouse schools, a large residuum remains, and always has remained, who are untouched by any educational institutions, and who form a constant supply to these expensive Board schools. In order to grapple with this state of things, fresh agency must be employed, and special schools provided.

On Tuesday, Mr. T. Brassey delivered an address on "Economy in Trade." The hon. gentleman said the great advance in wages was a conspicuous feature of modern English industry. The demand upon the labour market had far exceeded the supply, and the artisan and labourer had not been slow to take advantage of a situation which had afforded them a brilliant opportunity. It was too often alleged that the recent rise in wages was really attributable to a series of successful strikes. He maintained, on the contrary, that a strike against a falling market was never successful, and that trades unions, as an organization for the purpose of raising wages, could

never do more than assist the workman to obtain an advance at a somewhat earlier date than that at which the competition among employers would have brought about the same result. He might quote the unfortunate strike in South Wales at the commencement of this year, as a signal instance of the inability of trades unions to cope with the superior resources of the employers when firmly united together. With regard to the price of coal, the prosperity now enjoyed by coal owners might continue for a year, or two years at the most; but at the end of that time the influx of capital into the trade, attracted by the present high profits, would infallibly lead to some reduction of price.

In the Economy and Trade Department the licensing question in its various aspects was discussed at considerable length. Mr. D. Carnegie read a paper "On the Licensing Laws of Sweden and the Gothenburg Public-House System." In Gothenburg, a town of 60,000 inhabitants, public-houses had for the last seven years been conducted on an entirely new principle, and with such success that a bill called "The Spirituous Liquors (Scotland) Bill," founded on that principle, was introduced in the last session of Parliament, and would no doubt be renewed next year.

In the Education Department Mr. Meiklejohn read a paper on "The Effects of the Pressure of Competitive Examination upon Education," in which he spoke strongly against the system of cramming scholars for examination. Dr. Reden, of Yarmouth, said cramming was the abhorrence of every genuine teacher, but how could it be avoided? Lord Houghton said it was a serious matter the extent to which the system of competition was being carried in regard to Civil Service appointments; and if all the objections which had been urged against it were true, it must have a baneful effect upon the future intellectual condition of the community. The objection to it was not confined to schoolmasters alone, but even the persons who were engaged in the competition admitted its evil, and shewed how extremely incompetent it was. He could not see how they could very well avoid a certain amount of competition; but when competition superseded the matter of daily work and general industry, then it became dangerous.

In the Health Department Dr. Hartwicke read a paper on "The Recent Outbreaks of Typhoid Fever in Marylebone." He controverted the idea that the source of contamination was to be traced to the farm whence the milk originally came. He said that milk and water might be polluted by sewer gases, and the real remedy lay in strict attention to the removal of foul odours from our drains and sewers, keeping our dairies clean and sweet, and so annihilating all dangerous nuisances of that character in and about our dwellings.

The concluding meeting of the Congress was held on Wednesday, the 8th ult., at the Victoria Hall, Lord Houghton in the chair. The Secretary-General (Mr. C. W. Ryalls) read a report from the council, which expressed its satisfaction with the manner in which the arrangements had been carried out by the local executive. The report also remarked that the Congress, both as regards the numbers attending and the nature of the business, had been highly successful. The council had accepted an invitation from Glasgow to hold the Congress of 1874 in that city.

Mr. G. W. Hastings, in moving the adoption of the report, took occasion to disclaim any intention to insinuate that all American prisons were in a bad state. He maintained, however, that the law relating to witnesses required great amendment in some parts of the United States. Thus, two young boys who had witnessed the murder of Colonel Fiske, in New York, were put in prison in order that they might not be tampered with, and they were in prison still, as the case had not yet been disposed of.

Mr. Mutu Coomany Swamy, of Ceylon, seconded the motion for the adoption of the report, which was agreed to. Lord Houghton, who described the Congress as a kind of "Parliament out of Session," moved a vote of thanks to the Mayor, Corporation, and citizens of Norwich, and also to the nobility and gentry of the neighbourhood, for the cordial and hospitable reception accorded to the association. The Hon. C. Fortescue, M.P., seconded the vote of thanks, which was adopted unanimously. Votes of thanks were adopted to the Bishop of Norwich, the local secretaries, and others, and the proceedings terminated.

We may say of the Social Science Congress, as we have said of the British Association, that this year's gathering was productive of much good. There are some carping critics, we know, who have a genius to criticise what they do not nor will not understand, who pretend to see no good. We think otherwise, and hundreds of others think with us, in acknowledging the benefit of such yearly gatherings.

THE MONOGRAPH OF CORMAC'S CHAPEL, CASHEL.

CORMAC'S Chapel, Cashel, may in sooth be called one of the most remarkable pieces of ancient ecclesiastical architecture in the three kingdoms. It has been often delineated and word-painted, but seldom accurately or with a fidelity equal to its merits. To all—whether artists, architects, archæologists, or mere lovers of these studies, or patrons of the arts by which architectural gems may be portrayed to serve as examples to be imitated or prized for their inherent beauties alone,—a careful illustration of Cormac's Chapel in all its architectural details must be a welcome work.

Such a monograph, we have reason to believe, will be that about to be issued by Mr. Arthur Hill, of Cork. No library of any pretensions in Great Britain or this country ought to lack this important work, illustrative of the archæological history of Ireland. The work will be a reproduction by the photolithographic process of a carefully and scrupulously measured set of drawings, which were awarded a silver medal by the Royal Institute of British Architects, and will consist of twelve lithographic plates, 17 in. by 13½ in., containing two plans, two elevations, and four sections, uniform in scale with the "Ancient Churches of Kilmalkedar and Templenahoe," previously published by Mr. Hill, with a complete series of details and descriptive particulars. There will also be in addition three large and magnificent photographs 12 in. by 9 in., specially taken by Mr. Hudson, of Killarney. Not speaking of the labour devoted by Mr. Hill, the cost of the publication will be considerable, and it will need a good list of subscribers to enable him to publish it without a personal loss. Whoever becomes a subscriber will be certain to receive more than value for his money, even if no spark of archæological fervour or architectural love had an abiding place in his heart. We hope Mr. Hill's countrymen will rally round him in his zealous efforts to perpetuate the history and architectural beauties of Cormac's Chapel. A professional man who has other urgent calls upon his time, particularly in this country, cannot be expected, much as he may love art or archæology, to publish at a loss. Much has been done of late years to delineate and preserve our national monuments from destruction, and rescue their history, and place it upon a firm basis, but

"Stone walls in time will sever";

and if we cannot preserve them for aye, we can at least, by the aid of art, send their reflex forward through unborn generations as things of beauty and a joy for ever.

WORKS AT CARLINGFORD LOUGH.

THE engineer of the works here, Mr. James Barton, says in a report he has addressed to the Chairman and Commissioners of Carlingford Lough, that the works may be dated to have begun May, 1867, some preliminary work, and the construction of your dredging plant, having been accomplished in 1866. Since that date 500,050 tons have been excavated from the bar, and deposited in deep water. The greatest number of days in any year upon which the weather and circumstances permitted the dredging to proceed was 105, and the least 62, and the greatest tonnage raised in one year was 99,000, in 1869. This year's tonnage now amounts to 92,050, and if this month prove calm it may yet be the largest. The largest tonnage raised in one day by your dredger was over 4,000 tons. The result of this work to the present time is the opening of a clear channel, 400 feet wide and 14 feet deep at low water of springs, and within that channel a deeper one of 300 feet wide, 18 feet deep at low water. This channel extends for about three-quarters of a mile from the deep water outside to the deep water in the Lough opposite Haulbowline Lighthouse. This channel has also been marked by buoys on either side, and all the principal points bounding the deep water of the Lough have been also by your directions marked by conspicuous buoys. The Lough has also been made thoroughly accessible at night for commercial and refuge purposes by two screw-pile lighthouses, which, after long negotiation

with the Board of Trade and Trinity Board by you, have been erected by the Irish Lights Commissioners, at the expense of the Mercantile Marine Fund. These two lights, in one, lead vessels in and out through the centre of the new channel. The opening of the port of Greenore within the lough, and daily sailing of its steamers at fixed hours, irrespective of tide, and the prospect of a large development of the commerce and trade of the North of Ireland by the facilities afforded thereby, are the first great results of your work; and as the safety of the lough becomes more known, and as the entrance channel is still further widened, its importance as a refuge harbour will be developed, and much valuable life and property will thereby be saved. I estimate that three seasons more, if fairly moderate weather occur, may complete a channel 600 feet wide and 18 feet deep at low water of spring tides, which I think will be sufficient for the largest class of shipping.

CIVIC LYRICS.—No. XLVIII.

WHO DO YOU THINK ?

Who squandered the public money,
Who robbed the public till,
And lived like drones while the honey
Was in the hive on the Hill ?

Who mortgaged the rates and taxes,
And turned Dame Fortune's wheel,
Till, broken upon its axle,
They suddenly lost their zeal ?

Who talked of a Central Station,
Sweeping the Puddle across,
With main line under the nation,
And a branch to Harold's Cross ?

Who poisoned the city's river,
The streets, and homes of the poor;
And said that God was the giver
Of fell disease at each door ?

Who wasted the widow's payment
Of rates, she starved to make up ?
What boots if she pledged her raiment,
If lawyers and friends could sup !

Who floated one hundred "bubbles,"
And puffed one thousand schemes,
And said that the Civic troubles
Were all in the land of dreams ?

Who voted tributes and pensions
To fellows that would not work,
Except at hatching dissensions
O'er bottle and knife and fork ?

Who chafes at end of their tether,
And, having had rope enough,
Are hanging themselves together,
And blowing their final puff ?

CIVIL.

ARCHITECTURAL ASSOCIATION OF IRELAND.

THE opening meeting and conversazione of this Association was held at their rooms, 212 Great Brunswick-street, on Thursday evening, the 23rd ultimo, the President, J. J. O'CALLAGHAN, in the chair.

Amongst those present were—Jonathan Pim, M.P.; P. J. Smyth, M.P.; Very Rev. Canon Pope, Maurice Brooks, Marcus Keane, J.P.; J. R. Carroll, W. Fennell, H. Oldham, H. Brett, jun.; T. Goodwillie, A. W. Robinson, R. O. Longfield, T. Holbrook, J. Kirk, James Farrall, D. J. Freeman (Treasurer), S. Catterson Smith, John Holmes, Dr. Barker, T. H. Longfield (Hon. Sec.), C. J. Allen, W. Neill, J. C. Morrell, Joseph Robinson, Dr. T. Purcell, C. Geoghegan, Peter Roe, A. E. Murray, J. Mulligan, E. L. Clarke, J. L. Robinson (Hon. Sec.) R. H. Monsell, Dr. Frazer, Dr. Grimshaw, T. Dockrell, T.C.; W. M. Mitchell, V.P.; Rev. J. F. Shearman, G. Mitchell, R. S. Swan, Sandham Symes, H. M'Manus, R.H.A.; Rev. J. Carolan, W. R. Maguire, J. P. Griffith, C.E.; E. T. Owen, James H. Owen, P.R.I.A.I.; J. W. Haughton, H. Keogh, H. Wilmot, Charles H. Brien, H. Douglas, J. Cahill, E. Oldham, &c.

Mr. J. L. Robinson (Hon. Sec.) read letters of apology from Lord Powerscourt, Sir R. Griffith, Dr. Aquila Smith, Dr. Steele, the Archdeacon of Dublin, B. T. Patterson, J. Maguire, Monsignor Woodlock, W. C. White, J. Lanyon, J. M'Curdy, Rev. E. Seymour, Dr. Cruise, B. Stoney, C.E.; T. Fry, Isaac

Butt, M.P.; Lawrence Waldron, Lt.-Col. Adamson, J. E. Rogers, &c.

The minutes of previous meeting were read and confirmed.

Mr. T. H. Longfield (Hon. Sec.) read the

ANNUAL REPORT.

"The committee of the Architectural Association of Ireland have much pleasure in submitting the following report of their proceedings for the past session, and in announcing the great success of the undertaking and the very satisfactory manner in which it has passed through what they trust will prove the most trying period of its existence, viz., its first session; and also in laying before the members a syllabus of the business to be transacted during the session 1873-4.

"Eight ordinary general meetings during the past session were held on the fourth Thursday of each month, together with three extraordinary general meetings, at which papers were read by Messrs. William Butler, James H. Owen, M.A., and John L. Robinson.

"The attendance at the general meetings was very satisfactory, and the discussions that took place exceedingly interesting and instructive.

"Two special business meetings have been held on November 14 and March 27, at which some alterations were made in the rules—viz., 'That the election of members shall for the future be by ballot, with an entrance fee of 10s. 6d. in addition to the annual subscription'; and 'That a vice-president be elected.'

"They have also pleasure in announcing that, through the generosity of the Royal Institute of the Architects of Ireland—who have kindly placed at the disposal of the association their entire collection of books, including the recent valuable donation from Mr. E. Sharpe, and assisted by other liberal contributions,—they are enabled to open a library for the use of the members.

"It is to be hoped the association will be enabled each session to allot a portion of their funds to the purchase of new works, and that other benefactors will come forward with donations towards it. The committee hope that it will prove useful to the members of the association. They have adopted the system of lending out the books to the members, and trust that all who so use them will treat them with the greatest care, as they are responsible to the Royal Institute of the Architects of Ireland for their safety and good condition. A series of rules has been drawn up, for the management of the library, which must be complied with by members having recourse to it.

"The Class of Design—which may be looked on as one of the leading features—has, as a general rule, been very well attended, although the sketches sent in might have been more numerous, few members having sent in the requisite number (six) to entitle them to compete for the prize. The committee trust that next session the junior members will be more fully alive to the usefulness of this class, and will not be deterred from sending in sketches by the consideration that they will be submitted to a searching criticism by the chairman and members present, for it is by such instruction that they will acquire a knowledge of the art of design, without which they need never hope to practise successfully, either as architects or artists.

"The Class of Construction during the past session, although well attended, has not fulfilled all the expectations of the committee. The system adopted of questions and written answers may have overtaxed the time at the disposal of the members, as very few continued to send in answers with any regularity. Nevertheless, the questions printed in the syllabus were fully discussed by the members present, and constituted perhaps the pleasantest and most instructive meetings of the session. The system which the committee propose to adopt next session will differ in some respects from that of the last, and they trust will be found to work better. They would impress, however, on members the necessity of reading up the subject for each evening, that they may be enabled with confidence to join in the discussion. By attending regularly the meetings of the Class of Construction, the junior members of the Association will learn a practical knowledge of their profession that would take perhaps years to acquire.

"The Association has visited during the past session: Christ Cathedral, Grain Store, Sir John's quay; the Augustinian Church, John-street; the Munster Bank, Dame-street, &c. The committee beg to thank Messrs. G. E. Street, G. C. Ashlin, W. Stirling, and T. N. Deane for allowing them the privilege of visiting the buildings, of which they are the respective architects. The members next session will, it is expected, attend these visits on Saturday afternoons with greater punctuality and in larger numbers, the time (three o'clock) being very convenient.

"The first annual excursion of the Association took place on Saturday, the 21st of June last, to Bective Abbey and the various fine old castles and abbeys in Trim. The members were enabled to visit the large Cistercian Abbey at Bective; St. Mary's Abbey at Newtownclonbun, which has a very large and comparatively elaborate church; the Yellow Steeple and King John's Castle, one of the most perfect examples of mediæval military architecture in Ireland. In the evening several of the members dined together at the Gresham Hotel.

"The committee trust to be enabled during the coming session to have a Science Class under the direction of a Tutor of T.C.D., meeting in the rooms of the association. Should such an arrangement be made, due notice will be given the members.

"In conclusion, the committee trust, now that the association has so successfully passed through its first session, it will increase in usefulness and strength; that the members will take an interest in it, and attend all its meetings with as much regularity as possible; and that each succeeding session they will be enabled to add some new feature to the programme, that its sphere may be still further extended, and its utility increased."

The President having read his inaugural address,

Mr. Jonathan Pim, M.P., proposed "That the thanks of the meeting are due to the President for his address." He said it gave him great pleasure to hear the able address just delivered by the President. So far as he could judge, the buildings erected five or six centuries ago were far better constructed than those of the present day; many of which would not, he thought, be in existence a hundred years hence. He, however, must say that a great improvement had taken place in city buildings within the past twenty years. Twenty years ago there was not a building in Dublin of any architectural pretensions, except those erected in the last century, whilst now we could boast of as many and as fine public buildings, banks, insurance and mercantile offices, as any other city in Europe. Such an improvement had been brought about by such societies as this Association, which he hoped would go on and prosper.

The Very Rev. Canon Pope seconded the resolution. In the course of an eloquent speech, the rev. gentleman truly observed that wherever social order and content reigned the fine arts flourished; hence the various governments of Europe laid out large sums of money annually in order to foster a love of art in their people. There was a difference between the useful arts and the fine arts: the one are necessities, the other luxuries. The cultivation of the fine arts denoted a high state of civilization, as in Greece and Italy. Of all the fine arts, he considered architecture the first. The sculptor, out of a block of stone, fashions the figure that gives delight to all; but the figure is there in the block in the mind of the sculptor, who has only to release it and give it shape by cutting away the rough stone with which it is surrounded. But the architect, from the rough quarry brings the stones, and, being carved and placed together according to his designs and directions, there arises a building to gladden the eye of man. God has not given power to man either to create or destroy anything on this earth, but the nearest approach to creative power is when the architect is enabled to raise a beautiful building that has originated from his brain and inventive genius. He also said that he had to bear testimony to the great improvement in architecture of late years, especially of buildings that were dearest to him—the ecclesiastical edifices of Ireland, which were set as gems in the beautiful scenery for which our island is famed.

Mr. P. J. Smyth, M.P., proposed "That the address be printed at the expense of the Association."

Dr. Frazer, in seconding the resolution, said that it gave him very great pleasure to see the young architects working together, depending only on themselves. He was sure the Association would prosper. It reminded him of the time when a number of artists banded themselves together and formed by their own exertions the Royal Academy in

London; and he hoped the Association would be as prosperous as the Academy.

Mr. J. Rawson Carroll, in moving "That the Association is deserving of the support of the profession," said that as a Fellow of the Royal Institute of the Architects of Ireland, he promised the hearty co-operation of the elder body with the Association in all its undertakings.

Mr. S. Symes seconded the motion.

Mr. Maurice Brooks (Lord Mayor elect) moved "That it is most desirable to enlist the sympathies of the kindred professions of painting, sculpture, and engineering," which was seconded by Mr. H. M'Manus, R.H.A., on the part of painting; Mr. M. A. Hayes on the part of sculpture; and Mr. Griffith, C.E., on the part of engineering.

A vote of thanks having been proposed to the chairman, the proceedings terminated.

CORRESPONDENCE.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—In the notice of works contained in your last issue you mention Mr. Holmes as being the architect of Mr. Smyth's new residence at Stillorgan. This is incorrect, as our firm are the architects to the work in question, and we shall thank you to set this right in your next issue.—We remain yours faithfully, M'CURDY AND MITCHELL.

10 Leinster-street, Dublin,
22nd October, 1873.

[We are always willing to allow architects and others the opportunity of correcting any error or misstatement appearing in our columns in respect to their works. We wish, on the other hand, that our metropolitan architects exhibited the same amount of courtesy as the provincial ones do, in answering any necessary queries or supplying correct data, when applied to, in relation to works they have in hand. A conductor of a professional journal cannot be expected to have correspondents everywhere; and architects might often save us trouble and serve their own interests by supplying us with naked facts. As items of news, notes of works in progress or intended are useful. We neither desire nor ask for eulogistic details from the hands of the architects or builders in town or country.—Ed. I. B.]

TECHNICAL EDUCATION.

We have more than once directed attention to the origin and sources of the funds of the London City Companies or ancient City Guilds of trade. *Bona fide* guilds of trade, of course, they have long ceased to be, although they inherit the property and trusts belonging to the old trade's guilds of London. With the exception of two or three companies, the remainder of the nearly one hundred City Companies are doing but little in favour of technical education. A movement some time since was set on foot; it met twice, and separated without coming to any definite resolve. On Tuesday last the committee met again, and, under the presidency of the Lord Mayor, agreed to refer a draft plan proposed by his lordship to a committee for completion and for circulation amongst the City Companies, asking them specifically what they are prepared to contribute. As Master of the Stationers' Company, the Lord Mayor recently organised the delivery of six lectures in the Corporate Hall—two on the history of printing, two on the history of paper-making, and two on engraving on metal and wood. The success of these lectures was so great that they had to be delivered twice over, proving conclusively the anxiety which exists on the part of the operative classes for sound information on technical subjects, such as it would be in the power of the City Companies to supply. A fair proportion of the most wealthy of the companies having more than once announced their readiness to co-operate, in order to give technical education in the city a start, the Lord Mayor suggested that they should be asked in the first instance to subscribe £10,000 to build a college—say on

one of the vacant sites near the Viaduct—where lectures could be delivered and classes formed for instructing working men in the scientific principles involved in the trades they carried on. A long conversation ensued, some of the representatives of the companies who were present cordially supporting the proposal, while others were inclined to throw cold water on the whole thing, in spite of the warning of one or two of the speakers, that they would do well to expend some portion of their funds in this useful way lest a worse thing should befall them when the attention of some reforming Government was directed to their present style of expenditure. The Rev. Mr. Solly attended as a deputation from the Trades Guild of Learning, and appealed to the City Companies for aid to that organisation to continue to carry out their work of technical education.

The London City Companies have often been warned, and that, too, by their friends. Our contemporary the *Builder* long since pointed out the work which it was their duty to undertake. Certain we are, if they do not move in the interests of education and art, and devote a portion of the enormous funds of which they are only trustees, to those purposes, they will wake up some fine morning and find their occupation gone.

DR. MAPOTHER'S LECTURE.

THE inaugural lecture of the winter session of the Royal College of Surgeons, delivered by Dr. Mapother, was an excellent, instructive, and entertaining one. His review of the lives of celebrated physicians and surgeons who lived, moved, and practised in this city since the latter end of the seventeenth century until recently, and who improved their art while elevating their profession, cannot fail to do good from the number of excellent examples it furnishes. The reporting staff of our daily Press has not done justice to his lecture, neither have the editors nor readers for the Press. We regret to have to allude to the incompetent manner in which the lecture is placed before the public, with errors typographical as well as resulting from inefficient reporting. Several columns of addresses are often telegraphed over night time to the morning journals of London without an error, where an error is pardonable; but in the matter we allude to there could be no excuse. If we do not obtain addresses verbatim, let us at least have what portions we do get free of blemishes. Botched work ought to be scouted everywhere, whether in connection with the Press, forum, or workshop. A full and corrected report of Dr. Mapother's lecture, in pamphlet form, would, we think, be welcome to many, for it would be useful not only to the medical profession, but highly interesting to the general reader.

MR. COTTON, THE CORPORATION, AND THE GAS COMPANY.

A REPORT is in circulation that Mr. W. F. Cotton has been appointed to the post of "Gas Manager" to the Alliance and Consumers' Company, at a salary of £1,000. We do not vouch for its truth, and if true, we do not wonder that it is so. If we mistake not, Mr. Cotton's services secured him recently an increase of salary by the help of his friends in the Town Council. It will be in the remembrance of many that Mr. Cotton in last January, in his reply to Mr. George Anderson anent the Corporation Gas Purchase measure, wrote these words—"I have a practical knowledge of the question of which I write, and have no connection with any gas concern in the city of Dublin." Mr. Cotton said a good deal more which is worthy of notice just now, and we advise those who are interested to read his letter in *Saunders's News-Letter* of the 24th of January. Mr. Cotton may be a very efficient Inspector of Gas Meters, but his practical knowledge may be well doubted as to his fitness for his new post. Assuming that he has been ap-

pointed or is about being appointed, we can well understand his recent advocacy in favour of the Corporation measure. The local body expect to succeed next session in getting the management of the gas into their own hands; and, if so, Mr. Cotton will still be a servant of the Corporation. In the meantime, it will be asked, are both offices to be held by the same person? We expect to hear the public giving vent to their opinions respecting the new appointment, in the following words—"Another Corporation Job"; and in the Town Council we will not be surprised to hear Messrs. Dennehy, French, and others rising to ask a question about the pros and cons of the appointment of Mr. Cotton, and the concern of the Corporation or some members thereof in the matter. More anon.

P.S.—As we were going to press we received a communication from a well-known citizen, in relation to the Gas Question and Mr. Cotton's reported appointment. The writer deals with the qualifications of gas engineers and other matters, and puts some pertinent queries, which will have to be answered. The consideration of the question perforce will have to stand over till next issue.

NOTES OF WORKS.

The foundation-stone of a new Roman Catholic church has been laid at Delvin. The building will be 130 ft. in length by 44 ft. in breadth across the aisles, and 66 ft. across the transepts. It will consist of nave, aisles, transepts, chancel, and two side chapels. The tower, at the western end, will be 130 ft. high. The walls will be of dark limestone, with white freestone dressings. The roof will be open, with arched principals resting on moulded Bath stone shafts with carved capitals. The structure will be in the "French Gothic" style, and will cost about £6,000.

The parish church of Great Connell, diocese of Kildare, has been re-opened after undergoing repairs. A new organ, the gift of Miss Powell, Monkstown, has been erected.

The new convent chapel at Ardee, County Louth, has been dedicated by the Most Rev. Dr. McGettigan.

Drawings are being prepared for reconstructing portions of the Cork City Jail on the separate system, by Mr. Robert Walker, architect, Cork.

Ballinvullin House, Mitchelstown, is being remodelled for Thomas Carroll, Esq., J.P., by Mr. E. Murray, builder, under the superintendence of the same architect. The style adopted is Classic.

No. 82 North Main-street, Cork, is being rebuilt for Mr. James Forde, by Messrs. E. and P. O'Flynn, builders, under the superintendence of Mr. Robert Walker, architect.

MARCELLA BROCAS.

(SISTER OF WILLIAM AND HENRY BROCAS.)

At an advanced age the sister of William and Henry Brocas has passed away, at Pembroke-road, in this city. We are not aware that the sister of the brothers Brocas distinguished herself particularly, but we believe she had a deep love for the art with which her brothers' names were long connected in this city. In the commencement of the present century Henry Brocas was known as a young and promising engineer, and, if we mistake not, some of his earlier efforts will be found among the illustrations of the "Anthologia Hibernica," and in connection with some of the statistical publications of the Royal Dublin Society. For many years the late Henry Brocas was master of the school for Ornament and Landscape Drawing in the Dublin Society's Art Schools, and resided at Grafton-street. William Brocas, his brother, was a professor of painting and drawing, and was also known for a number of years by the habitues of the Academy in

Lower Abbey-street. In Wilson's Dublin Directory for the year 1818, we find the name of "Henry Brocas, Clarendon-street." We are of opinion that the Brocas family were of French extraction, and possibly descendants of the French Huguenots, many of whom settled down in the Liberties of this city after the Revocation of the Edict of Nantes, and who mostly were engaged in the silk and weaving trades. The name of Nicholas Brocas occurs in Wilson's Dublin Directory for 1786 (the only one of the name), as laceman and haberdasher, and in 1818 the names of Nicholas and Robert Brocas appear again in the Directory as brokers, at 10 Lurgan-street. In the Directory of 1830, the name of S. F. Brocas, Henry-street, professor of drawing, appears as well as that of William Brocas, and also Brocas and Sons, Linen Brokers and General Commission Agents, 8 Linenhall-street. They are apparently all of the same branch of the family. Of William and Henry Brocas particularly, we will probably on an early occasion have something more to say, but in the meantime we invite from correspondents any notes in relation to the members of the Brocas family, and their connection with the fine arts of this country. These few hurried jottings are all we have time to print now, suggested by reading of the death of Marcella Brocas.

OUR MODEL CORPORATION!

A SPECIAL meeting of the Corporation was held on Monday for the purpose of considering and confirming a previous resolution authorizing an application to be made to Parliament for an act to amend the Dublin Corporation Waterworks Acts and Fire Brigade Act, and to confer on the Corporation power to borrow and re-borrow capital not exceeding £50,000, to enlarge works, to extend telegraph lines, and connect existing lines, on the security of existing rates; power to apply out of the public water rate an additional sum to the purposes of the Fire Brigade, &c.

Mr. Dennehy said it was a very serious matter for the Corporation to increase the debts of the municipality by £50,000. The worthlessness of such estimates as Mr. Byrne relied on was shown by the fact, that the estimated income for 1872 exceeded the estimated expenditure for that year by £3,381, whereas the actual expenditure for that year came to be £10,800 in excess of the actual income. With the exception of three years, the expenditure of that committee had been in excess of the receipts, the aggregate excess for the ten years being £48,000. The arrangements of the Corporation with the townships were disastrous to the city. He moved as an amendment, "That before taking any further action with reference to the promotion of the bill, the bill be printed and placed in the hands of members of the Council for their consideration and approval."

Mr. Franklin seconded the amendment.

Mr. Byrne opposed the amendment as being insidious, and calculated to cut at the root of all that had been done in the matter. As to the water arrangements with the townships, those arrangements were wisely made.

The Hon. Mr. Vereker, in supporting the amendment, said the expenses of the Corporation in litigation were something unconscientious and extravagant, and, instead of there being an unwillingness, there was a thirsty desire to enter into such litigation. There could have been no difficulty whatever in preparing the bill which the Corporation were now called upon to authorise the promotion of, and to lay it on the table in order that it might be seen and, if necessary, criticised by members.

The motion to increase the taxation of the city was of course carried, and the clique were satisfied.

The proceedings on Tuesday may be summed up in the words of the "Irish Times," which is less severe in language than we would be inclined to use. "The Corporation of Dublin were occupied yesterday in performing the pleasant operation of spending the ratepayers' money. They granted £1,229 as superannuation to prison officials, £4,692 for repair of roads, of which sum £2,841 was given for repairing the roadway at City-quay! The vote for industrial schools was £8,751—rather a serious item—and over it was fought a battle royal, in which every combatant claimed credit for purity, incorruptibility, and working for nothing! while others perpetrated "scandalous jobs." The final instalment of the sum of £17,256 for the alteration of Essex Bridge was passed, and the citizens may feel an interest in knowing that the Grand Jury cease,

which in 1851 was a modest £13,000, has this year mounted up to £60,739. The Town Councillors, having passed all the votes on the paper, retired home."

SANITARY AND OTHER NOTES.

SINCE our last publication a number of summonses have been issued and penalties inflicted on persons who in a variety of ways endangered the public health north and south of the city by keeping nuisances on their premises. Several offenders were habitual, who took no notice of former warnings, but continued to keep their houses, back yards, and sewers, in an uncleanly and ruinous condition. The Corporation has held a meeting "to take into consideration the necessity of raising by means of a borough rate, a fund necessary to meet the increasing expenses entailed upon the Corporation under the Sanitary Act of 1866, and acts amending the same." This resolution shows wonderful nerve and assurance on the part of the Civic body, that has for the last thirteen years done scarcely anything to improve the health of the city. The increased expenses alluded to were not entailed by the sanitary act; but were incurred by floating bills and systematic jobbing. The Dublin Sanitary Association through their sub-committee of inspection have reported several places in a disgraceful condition.

KINGSTOWN.—At a special meeting of the Kingstown Commissioners, the subject of the drainage was discussed at length. The following resolution was affirmed: "Resolved—That we deem it necessary, for promoting the health of the township, that application be made in the next session of Parliament for a special act to authorize the construction of an intercepting outfall sewer, and for perfecting the sewerage system of the township; for powers in relation to the acquisition of gas works, the erection of a town hall, the establishment of markets and slaughterhouses, and the improvement as to sanitary matters otherwise of the township; for extending the boundaries of the township; better regulating its water supply; for enabling the Commissioners to borrow for sanitary purposes from the Government on like terms and conditions as those in the English Public Health Act, 1872; to alter or vary certain provisions of the acts now in force in the township, relating to exemption from taxation, the mode of levying and collecting rates, sewerage districts, qualification of commissioners, appointment and dismissal of officers, and for other purposes." The chairman in the course of an address observed: "An interval of ten years would elapse before another census would be taken, and the contention of the Corporation was that, although they were now paying £200 extra, they were not to get more water. That was an unfair arrangement. What he suggested was that they should pay for water used in excess, in consequence of increased population, at the rate of 2d. per 1,000 gallons—the same rate that the Corporation received from the brewers. The power of dealing with the whole water supply should also be transferred to the township. The next matter was the extension of the township, by taking in a large district about Monkstown. The proposition was forced upon them, and the districts incorporated would have to consent to be rated at the full value of their land, and give the Commissioners the management of their water supply. Next, as to the proposed provisions for a town hall, courthouse, markets, and slaughter-houses. It had long been a grievance that the inhabitants of Kingstown should be obliged to go to Kilmaham to recover small debts. They proposed, if possible, to obtain a site from the Harbour Commissioners for the courthouse, opposite the railway station. The new building could be also used as a place of assembly and for entertainments, and he did not think the ratepayers would object to pay one penny in the £1 for it. All these rates together would come to 3s. 6d. in the £1. The present rate was 3s. He had received that morning a letter from the occupants of Clarinda Park, complaining strongly of the want of sewerage accommodation, and this was only one of many of a similar kind."

NEWRY.—A few days since Mr. Hawkeley, C.E., of London, inspected the works connected with the water supply of the town, previous to granting his certificate. The local journal understands that Mr. Hawkeley expressed an opinion that Newry at the present time possessed a supply of water second to no other town with a similar population in the kingdom. Under the circumstances, Newry may be congratulated, as she is more favoured than many towns which might sing in the words of Coleridge's "Ancient Mariner"—

"Water, water, everywhere
But not a drop to drink."

The Irish Builder.

VOL. XIV.—No. 334.

*Ollamh Fodhla.**



HE materials of Irish history are fastly accumulating in the hands and by the judicious and painstaking efforts of zealous native and foreign philologists, archaeologists, and antiquarians. The loss of numerous MS. tracts and tomes, which Paganism and Christianity have in common contributed and destroyed is, perhaps, an irreparable loss; but if we can interpret the stone literature of this old island, which Vandal malice and despotism and religious fury had failed to wholly destroy, we will succeed, to a great extent, in recovering our loss. The bowels of the earth are giving up our glorious records, and the utterances of tongues, whose echoes yet resound from the tombs of long-buried generations, are still to be heard in our mountain fastnesses, and from the depths of our sword-covered cities and ancient cemeteries. There is a little volume before us which it would be easy to review were we only to dispense the current criticism of the day, by awarding praise or censure as it suited or saved the critic trouble. To say that this volume is interesting, would be to use a very hackneyed expression; but when we say it is a learned, scholarly, and instructive little volume, we say what constitutes it a valuable one to those who will understand it, and will not deny its reasoning without showing good proof to warrant them in so doing. We do not now live in the era of historians like Edward Ledwich, although we fear there are a few of his shallow, jeering, and pedantic tribe amongst us. Fifty years have worked a wonderful change; yea, twenty-five years have worked a most marvellous change in the web of Irish history. The narratives of Geoffrey Keating and Patrick O'Flaherty, of the "Ogygia," are no longer met with ribald scoffs, and pronounced compilations of monkish fiction, or the emanations of disordered brains. Whether we accept Irish chronology on the basis of the Septuagint, or on that of Scaliger, it matters but little, as it can never destroy facts, though it may slightly shift the time of their occurrence. In the case in point, we lose nothing of importance, whether we go by the date of the "Four Masters" or not, as there is a very wide margin indeed for Ireland to put forward a claim for having renowned scholars and legislators at a period by hundreds of years antecedent to many of the most celebrated cities of the world. Following one account, "The Age of the World, 3,883, the first year of the reign of Ollamh Fodhla, son of Fiacha Finscothach;" and again, "The Age of the World, 3,922. Ollamh Fodhla after having been forty years in the sovereignty of Ireland, died at his own *mur* (house), at Teamhair. He was the first king by whom the Feis-Teamhrach was established; and it was by him Mur-Ollamhan was erected at Teamhair [Tara]. It was he also that appointed a chieftain over every cantred [a barony containing a hundred quarters of land], and a Brughaid over every townland, who

were all to serve the king of Ireland. Eochaidh was the first name of Ollamh Fodhla, and he was called Ollamh (Fodhla), because he was first a learned Ollamh, and afterwards king of Fodhla (*i.e.*, of Ireland)." So speak the "Four Masters" through their interpreter the late Dr. O'Donovan.

To trace the tangled web of Irish history for proofs, and to find many corroborating each other, though nigh three thousand years had elapsed, and then, strong with the belief that history had not lied, to cast about for more unmistakeable evidences, and to succeed in the happy discovery of them, has been the luck of Mr. Conwell. This luck has had its result in the identification of the tomb of Ireland's renowned legislator, Ollamh Fodhla. The theory built up by Mr. Conwell is not a plausible, but as far as we can see at present a well fitting one. The remains of the ancient Royal Cemetery of Taillten, on the Loughcrew Hills at Oldcastle, in Meath, are we think clearly identified, and Ollamh Fodhla's Chair and Tomb fixed. Doubts and misgivings may exist—every investigation or exploration is beset with these for a while, but judged by the light of historical facts, and the "finds" or remains unearthed on the Loughcrew Hills, there is nearly a moral certainty that Mr. Conwell has clearly proven his case.

It would be rather difficult and tedious to convey any sort of a clear estimate of Mr. Conwell's book to the English reader without reproducing a large portion of the matter of the volume, as well as some of the illustrations, which are almost indispensable to the study of the subject. One or two extracts here will not be out of place. "On Tuesday, the 9th of June, 1863, we paid our first accidental visit to the Loughcrew Hills, popularly and indeed geographically known as Sliabh-na-Caillighe; and finding the various summits of the range for two miles in extent studded with the remains of ancient cairns or tumuli, we were fortunate enough to interest the proprietor, the late James Lenox William Naper, Esq., and his agent Charles William Hamilton, in the discovery we had made, and through them we were enabled to make a systematic examination of this great primeval cemetery, then nameless and unknown, but which we shall see presently once had a name and a history of no mean repute." In 1864 Mr. Conwell made communications to the Royal Irish Academy on the subject, and in 1867 he employed a first-rate artist to draw all the curious and remarkable devices on the numerous large stones forming the interior chambers in these cairns. In August, 1870, Mr. James Fergusson, the author of "Rude Stone Monuments in all Countries: their Age and Uses," a book of great merit, accompanied Mr. Conwell over the Hills of Loughcrew; and from a personal examination was convinced that the cairns must be the remains of the ancient Cemetery of Taillten. Mr. Fergusson is indeed an acute observer, and a clear writer, and the conclusions he arrives at in his work in reference to Taillten, is strong testimony in favour of Mr. Conwell's theory. Independent of this testimony, we are, however, of opinion the Irish annalists place the matter beyond doubt. Speaking of the famous monarch and law-maker's tomb, Mr. Conwell says—"What first led us to conceive the idea that this cairn must be the tomb of Ollamh Fodhla was the fact of it having, as one of the thirty-seven large stones in the periphery of its base, a great stone chair facing the north, in our days popularly called 'the Hag's Chair,' measuring ten feet

in breadth, six feet high, and two feet thick; from which dimensions it must be upwards of ten tons in weight, allowing twelve cubic feet of rock to weigh a ton. It occurred to us that, instead of this being the chair of any old hag of antiquity, whether real or mythical, it would be much more reasonable to look upon it as having had, in the long past days of its glory, some practical use."

At that remote period in the history of man, before the advent of Christianity, it is well known that the sun was an object of worship, and the very fact, that the entrance to the interior chambers of the majority of the cairns on the Loughcrew Hills to the east or the rising sun bears strong internal evidence that this form of worship prevailed when these tombs or cairns were constructed. If such were the case (for we are without any absolute historic evidence as to the point) we can imagine how appropriately a great seat of justice was placed in the north side of the great law-maker's tomb, from which, with all the solemnity attaching to the place, his laws were administered, say at mid-day, with the recipients of the adjudication fully confronted with the great luminary, the object of worship. For these reasons we propose henceforth to call this remarkable stone chair, emblazoned as it is, both front and back, with characters perfectly unintelligible to us, "Ollamh Fodhla's Chair."

Illustrations are given of the front and back view of the chair and the tomb, and ground plan of the monarch's tomb. The chair is composed of a piece of rock known as native lower silurian grit. A rude seat is hollowed out in the centre, leaving an elevation on either side reaching nine inches above the seat; the back has fallen away. The original shape of the cairn is stated to be comparatively perfect, comprising a conical mound of loose stones, all apparently fragments of silurian grit.

"It is thirty-eight and one half yard in diameter at the base, having an elevation of twenty-one paces in slant-height from base to summit. A retaining wall, consisting of thirty-seven large flags laid on edge, and varying in length from six to twelve feet surrounds the base externally, and on the eastern side, this surrounding circle of large stones curves inwards for a distance of eight or nine yards on each side of a point where the passage to the interior chambers commences, the bearing of the passage being E. 10° S., probably intended to face the rising sun, at that period of the year when the occupant of the tomb was laid to rest, or when the fabrication of the cairn was commenced. The peculiarities of the construction and the internal arrangements of the chambers will be better understood from the foregoing."

Here is another extract which will possess an interest, as it will give rise to the query whether the quartz rock to be met with in the cairn was not obtained far nearer to the site of the cemetery than the places mentioned. "Inside the retaining wall of large flagstones, as far as was examined, and apparently going all round the base of the cairn, was piled up a layer, rising from three to four feet in height, and about two feet in thickness, of broken lumps of sparkling Irish quartz, a rock which does not geologically belong to this part of the island, and which, consequently, has found its way from some distant locality. The nearest beds of quartz rock are to be met with at Howth, about fifty miles S.E.

* "Discovery of the Tomb of Ollamh Fodhla (Ollav Fola), Ireland's Famous Monarch and Lawmaker, upwards of Three Thousand Years Ago." By Eugene Alfred Conwell, M.R.I.A. &c. Dublin: M'Glashan and Gill. London: Williams and Norgate. Edinburgh: Edmonston and Douglas. 1873.

from Sliab-na-Caillighe; in Wicklow, sixty miles S.E.; in Donegal, ninety miles N.; in Sligo, about the same distance N.W.; in Galway, 110 miles W.; but the fragments used here may probably have been obtained on the spot from some glacial deposits from Donegal without actually transporting from any of the localities above mentioned."

Very likely this may have been the case, and a search might also discover that a bed of quartz was within a very convenient distance of this cairn.

No better work could be accomplished by Mr. Conwell than by giving illustrations of the several stones composing the tomb of Ollamh Fodhla, with all their inscriptions and devices faithfully rendered. A time will come when some studious scholar will find a key by which these mystic symbols will be made to speak. These ancient rock-markings are not the scratchings or sculpturings of idle hands. Embodied in their occult Ogham character, if we be allowed to speak thus, there is a deep and pithy meaning, pregnant of glory and power, though for the present to us unutterable. It was a happy thought to sketch these devices while their form and outline possessed a sharpness after excavation. Had a long time been let to elapse, there is no knowing at present what might have been the loss. A close examination of these inscriptions shews plainly there is a system in their occurrence, and that the characters are arranged according to some observed order. We agree with Mr. Conwell in thinking that, by careful analogies and comparisons, their meanings will yet be deciphered.

In the preface of his work, Mr. Conwell very judiciously gives an account of the ancient Irish MSS. which he has used for his authorities; and a condensed notice is submitted from O'Curry's "Lectures on the Manuscript Materials of Ancient Irish History," of *Leabhar na h'Uidhre*, and of *Leabhar Lecain*, or the Book of Lecan. Short particulars are also given of "Annals of Donegal" and their compilers, commonly called the "Four Masters." The author also acknowledges his obligations to Brian O'Looney, Esq., M.R.I.A., for his valuable assistance in collating and revising Irish texts quoted. It was our intention to quote some of these interesting extracts, giving the Irish characters and translation; but we must forbear.

There is not a page of Mr. Conwell's little volume but will be found interesting to others besides Irish readers. The text is clear, and the description throughout is fascinating. The volume contains fifty-six well-executed illustrations, partly engraved by Dublin and London artists. The various devices on the inscribed stones were drawn by Herr Wilhelm Tomshon, of the house of Forster and Co., of Dublin. The engraver's work is well done, and was severally executed by C. D. Cooper and R. B. Utting, London, and William Oldham, Dublin.

The appendix is not the least valuable portion of Mr. Conwell's volume, as it contains descriptions of a great number of cairns and the remains of cairns, the places of which are indicated on the map given in the volume. The illustrations in the appendix comprise specimens of a number of inscribed bone implements, iron tools, Scandinavian flint knife (full size), antlered deer, stone basin and surrounding chambers, with their inscriptions, &c.

We can thoroughly commend Mr. Conwell's volume as a valuable contribution to Irish

history and archæological discovery; but he who would know its value must read it, and not be content with this cursory notice.

WANTED—AN IRISH BUILDING ACT, AND OTHER SANITARY WANTS.

To make town councils, public boards, architects, builders, and shopkeepers to do their duty by their neighbours, and to deprive them of the power and the will of injuring the public health at present and in time to come, we require a stringent Building Act for this country. Our English friends have an act, but it badly needs amendment, and that reform will, we believe, soon come to relieve them of some abuses. With us, however, there is something like chaos, and neither the law on the one hand nor equity or common sense on the other, affords us the least relief. The only persons who profit principally by the defect of the law here are the lawyers, and those who have money enough to build, patch, and create obstructions, and dispute their alleged rights in a court of law, where poorer folks, for want of means, are debarred from entering. We have Towns Improvement Acts, Nuisances Removal Acts, and a number of sanitary acts of course, which profess to afford a remedy for some crying evils; but the interpretation of the law of one, by our magistrates and judges, is made to confound and stultify the obvious intentions of others of these kindred measures.

Here, as well as in London, speculative and non-speculative buildings are pitch-forked, as it were, storey upon storey from basement to parapet, without attracting the least attention on the part of our borough engineer, city architect, medical officer, or sanitary inspector. Medical officers or sanitary inspectors in general cannot, we know, be expected to have any practical knowledge of house construction; but engineers and surveyors should possess that knowledge, and use it in the public service, as they are paid by the public. Streets are marked out and rows of dwellings erected which are guiltless of any proper system of drainage; and it is only in a year, or two, or three, after these houses have been occupied, it is found out that drainage is necessary to save the lives of the inhabitants in the vicinity. The line of frontage is ignored by some of our builders, and the fault is sometimes attributable to the intending owners of the houses being erected, whose ambition is to have the whole view of the street, right and left, to the shutting out of the vista and the light from their next-door neighbours' premises. Again, we have a whole street line of houses, house after house pushing out their horns like snails in the shape of shops to the edge of the footways. Within the last few years several fine streets have been disfigured in this city by the mania of shopkeepers to get out their window-panes in advance of their neighbours, whose shops were originally legitimately constructed as part and parcel of the one building.

Whatever excuse might be advanced formerly on the part of shopkeepers in very wide old streets, now backward and no longer fashionable or gorged with traffic, no such excuse exists now. Half a century ago, if one shopkeeper happened to encroach upon the footway, he was not immediately followed by half a dozen; and instances will be found in many old streets where only two or three tradesmen in the entire length of a

long street pushed out their shops beyond the line of natural frontage, and even in these instances long intervals elapsed. It is otherwise now, for we find in quite new streets within these few years past a number of grocers, provision dealers, and public houses have encroached, and are at the present moment encroaching, with their higgledy-piggledy, hotch-potch shop-front architecture upon the space of our footways. If one shopkeeper's sash projects three inches beyond the line of a next-door neighbour, a sting of jealousy is felt immediately, and the man whose soul is in possession of the green-eyed monster will not rest content until the builder or jobbing carpenter is called in to effect an alteration. While this alteration is being effected, the nervous shopkeeper whose neighbour is in advance of him is in a state of mortal terror lest he should lose one of his customers. When the shop-front is pushed out even beyond its limits, content is still unfelt, until an awning and shelves, rack and poles, are placed in front, so that the trade of the "pushing" tradesman may be pushed into the very street.

These are but a few of the abuses and obstructions auxiliary to the evils existing for want of a Building Act. Not only within our houses, but in the approaches and buildings subsidiary to our dwellings, do evils exist in number. The steps leading to our hall-doors, when resting on arches or lintels, and the vaultings in front of the basement which act as cellars—both are often constructed in a most careless and scandalous manner, and there is not only danger to the dwellers in the houses, but there is always a danger to the lives or limbs of the passengers on the flagways. Hall-door steps over areas are put up of flags not only too thin, but of stone that has not the requisite strength or bearing qualities. A flight of thin stone steps with their landings is often but merely poised, and they are more dependent on where they bear upon at starting and landing than upon the workmanship or the materials. These are matters which should receive attention at the hands of the authorities, for they are no less positive nuisances than filth, noisome smells, and unremoved sewage and scavenger.

Houses are built for the working classes in our midst, entirely destitute of any but a make-believe drainage; and, considering the wants of the poor man, and the rent he can only afford to pay, we know that a large number of children are crowded into one or two rooms. The cubic space of the rooms is not at all equal to the wants of the family, and the breathing of a poison-impregnated atmosphere is the consequence.

What are our borough engineers and district surveyors thinking of, or doing, when they elect to let such abuses pass without protest? The water supply at its source may be good, but its reception in a house, owing to many circumstances, may be a great evil, as also the refuse water of a dwelling. Tank and kitchen supply is often contaminated through the foul connection of water-closet pipings and through sewer gas. Houses should not be allowed to be let and inhabited as fast as they are built. A certificate should at least be necessary in the case of speculative houses, which are built to sell, shewing that they are fit to be inhabited; and the examination should be made by a duly-qualified surveyor possessing an intimate knowledge of house construction, and workmanship, materials, drainage, and other matters. The respectable members of the building profession may be relied upon, and architects who value their credit will not endanger it by forgetting their duty to their clients and the public. Stringent acts are, however, necessary, to prevent evil doers from perpetrating fraud, and murdering by detail men, women, and children who were born to enjoy life and benefit their species, like those who preceded them.

For the above reasons, and for others which are obvious, we require a Building Act, and an amendment of several kindred sanitary enactments.

RATEPAYERS' PROTECTION.

We are glad to see an effort made to afford some protection to the grievously-oppressed ratepayers of this city. The corporate taxation has been swelling year by year, until the citizens are unable to bear it longer. A check of some kind was needed to put a stop to lavish expenditure of public money passing through the hands of the civic body for objects foreign to the administration of that body. The duties of the Committee of the Ratepayers' Protection Association, now formed, will embrace no small field; and, if properly carried out, cannot but prove a benefit to this city. Every corporate project, whether wholly corporate or in alliance with another body, must be narrowly watched and examined, and every measure canvassed, until its design and purpose are made plain to the large body of ratepayers whose interests are involved. It is the duty of every ratepayer to study this question, and give his aid in a movement intended for his protection. The Dublin Ratepayers' Protection Association has held its first meeting; and we believe, by its resolutions, has made a good beginning. We shall afford to the society every assistance that we consistently can, while it adheres to the objects for which it has been formed, and keeps itself aloof from active politics and polemics. It can only be powerful and useful by strictly acting thus. Ratepayers Protection Societies are not novel organisations; they are plentiful throughout England, and many of them have achieved a large amount of good by watching over the interests of those they represent. A Ratepayers' Society, if honestly worked, will prevent many a job from being perpetrated, which, if carried, would inflict grievous burdens upon the community. We have long since suggested the formation of such an association as that now founded, believing that it was absolutely necessary as a check or preventive to the promotion of sinister schemes of taxation, the redressing of our local burdens, and for the reform of corporate abuses.

THE CORPORATION AND THE PUBLIC.

At a special meeting of the Corporation, held this week, Mr. Dennehy gave the following notice of motion:—

PERTINENT QUESTIONS.

That inasmuch as the resolution to proceed with the promotion of a bill in Parliament for the purchase of the Alliance Gas Company's works was carried on the 1st instant by a majority of three, and as two of those three were connected with the Gas Company, one as a director and the other as an ex-director; and as, under these circumstances, it is most unlikely that the committee of the House of Commons would pass or sanction such a bill, all further proceedings in reference thereto shall cease and determine.

Mr. Dennehy also asked why a notice of motion which he had given on a former day, referring to the alleged dangerous condition of the roof of the Round Room of the Mansion House, did not appear on the paper.

The Lord Mayor said the notice of motion had gone astray, but he was able to inform Mr. Dennehy that the matter of the roof was under the serious consideration of Committee No. 3, and action had already been taken on it.

We have often directed attention to Stephen's-green and other of our public squares, and demanded their free opening for the working poor of the city, and as a measure that would tend to the improvement of the public health. In regard to

STEPHEN'S GREEN,

Dr. Long stated that under the Stephen's-green Act of Parliament, the Lord Mayor, the City Members, the Recorder, the City Treasurer, and the Sheriffs were appointed *ex-officio* Commissioners

of Stephen's-green. He (Dr. Long) had had some communication with Mr. Pim, Sir D. Corrigan, Mr. Parker, and other gentlemen, and they had no recollection of having ever been summoned to the meetings of the commissioners. He thought that if the *ex-officio* Commissioners were summoned to the meetings the result would be that the privacy in which Stephen's-green was kept would be to some extent removed. He wished to ask whether the Lord Mayor, as an *ex-officio* Commissioner, had been summoned to the meetings of the Commissioners?

The Lord Mayor said he could not answer with respect to his first year of office, but as regarded his present year of office, he could say he had received no summons.

Dr. Long moved that the Town Clerk should be directed to write to the hon. secretary of the Stephen's-green Commissioners on the subject.

MR. COTTON AND THE "PUBLIC GOOD."

The Gas Inspector has tendered his resignation, having taken office under the Gas Company. The late Gas Inspector, with a modesty (?) that does him credit, says:—"In taking office under the Gas Company, he acted not from any motive of personal gain, but for the public good." As we understand, a promise has been held out to the late Gas Inspector, should the Corporation succeed in obtaining the management of the gas supply, Mr. Cotton's salary will be largely increased, on the motion of his friends in the Corporation, all of course "for the public good."

A motion has been carried to allow the new Gas Inspector of the Corporation £300 a-year, instead of £600, which was paid to his predecessor.

SANITARY AND OTHER NOTES.

SEVERAL more persons have been summoned since our last issue, and fines inflicted, for infringing the provisions of the Sanitary Acts, by keeping their houses and back yards in a filthy and dangerous condition. A floating cholera hospital is provided for the port, to which we have alluded elsewhere. The scavenging of the city shews little signs of any improvement, as numerous back streets are entirely neglected for weeks.

RATHFARNHAM.—The Guardians of the South Dublin Union brought an action against the owners of the Loretto Convent for the abatement of a nuisance, of a water-course filled with offensive matter, occasioned by the sewage from the convent, and proved to be injurious to the public health. An order was made for its abatement within three months.

KINGSTOWN.—At a monthly meeting of the Kingstown Commissioners, the surveyor's report showed that a new connecting sewer of 88 yards in length, by a depth of 11½ feet, had been completed in the main street, at a cost of £100, the estimated charge. The supply of Vartny water used in the township during the past month had been 440,000 gallons daily. Three additional lamps had been erected in the township; 140 tons of Bray Head stone had been spread on the roadways. The general report showed that the mortality in Kingstown during the past month had been 18 per 1,000 of the population. Mr. Kelly complained of the neglect of the paving and scavenging of the lower part of Kingstown. The attention of the surveyor was called thereto. He stated that the carts went daily to the district in question, and a short time ago a large amount of paving and kerbing had been carried out there. A report of a committee recommending the carrying out of sewerage on Glengarry-road was received, and the work ordered to be proceeded with as soon as possible.

BLACKROCK.—At a meeting of the Commissioners, Mr. Williamson, solicitor, read a report from the People's Park Committee, in which they stated that they had concluded all the arrangements for the purchase of the rights of the several persons whose property adjoined the slob lands required for the People's Park. It was also resolved that the offer of the colonel commanding the Royal Engineers to lease the Martello Tower and plot of ground adjoining the slob lands on the terms on which they were held by the Earl of Pembroke, viz., £8 a year, should be accepted.

BRAY.—At a meeting of the Commissioners, the Government auditor's (Mr. Finlay) report on the account of the township for 1872 was read. It stated the receipts to be £6,223. It disallowed £45 paid for bathing boxes, and £25 expended in connection with a boat slip. It recommended the solicitor to be engaged at once in getting in outstanding rates, and indicated that all legal costs should invariably be

taxed by the proper authorities. On the surveyor's certificate, £100 was ordered to be paid to contractor for the Bray Commons' new road, now open. The Earl of Meath introduced the subject of a proposed tramway between Bray and Bunniskerry. He stated that Viscount Powerscourt was favourable to the project, and would become the chairman to a company about to be formed in the matter. The commissioners undertook to view the subject favourably when it came regularly before them.

WICKLOW.—At a meeting of the Commissioners the subject of the water supply came on for discussion. A communication was read from the Dublin Waterworks' Committee, saying that they could not supply the town of Wicklow from the Vartny reservoir. This was on the strength of the engineer's opinion, who said that the committee should not entertain the application on any terms. After a long conversation, Mr. John Nolan gave notice that at the next monthly meeting he would propose that advertisements should be inserted in the Dublin papers for a contractor to make a tank at Ballyguile, capable of containing from 25,000 to 50,000 gallons of water, and that the opinion of Mr. Andrews, C.E., be taken as to the exact site for the tank, which is to be erected on the Corporation property.

BALLYMONEY.—The Commissioners in this town occupied themselves at last meeting with a long wrangle over the street contract, and the duties of their contractor in regard to the street scavenger. The business terminated, leaving the matter much in the same condition as when the matter was opened. Ballymoney does not seem to be lucky in regard to getting efficient contractors. It would appear that the work of one or two men is made to go a far way in that town. The contractor, we suppose, cuts his cloth according to his measure.

THE SPENCER DOCK AND THE NORTH LOTTS INHABITANTS.

In the Recorder's Court on Saturday last, a number of processes were brought against the Midland Great Western Railway Company by parties residing in the North Lotts and its vicinity for injury done to their houses by flooding, alleged to have been caused by the defective construction of the Spencer Dock. Among the evidence on either side we find the following:—

Mr. John Francis Leonard was examined in reference to the general condition of the district, and the means by which it was drained. In his opinion, the injury to the plaintiffs' premises was caused by the water coming from the Spencer Dock, which he believed had been negligently constructed. The water escaped owing to the bottom of the dock not being puddled, thus enabling it to percolate through.

Mr. Parke Neville, C.E., also considered that negligence was shown in the want of puddling. It might have been difficult to puddle it, but he would, at least, have tried it. He was, however, of opinion that the flooding of the district was not caused by the flow of water from the dock.

On behalf of the railway company, Mr. Price, C.E., was examined, and deposed that the dock was constructed under his direction, and that all proper skill and diligence were employed in so doing. It was impossible to construct the dock other than in the way it had been executed. It could not have been puddled on the bottom until the water was let in, as it was necessary to have a counter-balancing force to that of the water, which came through the surface, and which without that force would have scattered any puddle that might have been laid down. He did not believe the flooding of the district arose through the flow of water from the dock. Since the water had been let in, upwards of 1,200 tons of puddle, a foot deep, had been laid down, and the dock, he believed, was now staunch.

Mr. Apjohn deposed to taking eight specimens of water: two from the dock itself, and the remainder from different points in the locality adjoining, and the result of an analysis of these was, that he found the water in the dock was many degrees less saline than that from other places. He did not believe the water causing the flooding came from the dock.

Summing up the strong evidence given in the case, the Recorder stated that as there would be an appeal, he thought it right to save expense and time by stating that he had already formed what might be called a civil bill opinion on the case. His impression was, that the district had been more or less injuriously affected by the construction of the dock, but that there was no want of skill and diligence on the part of the company. From his reading of the case, therefore, the company were not liable.

It was then arranged that on this ruling the plaintiff should take a dismissal on the merits, and that in the case of an appeal being successful, the other cases should abide by it.

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

(Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.)

PENDANT to Semple's designs and observations respecting the bridges proposed to be built in the last century at Waterford, Wexford, and Derry, we now propose to furnish a few short particulars of these bridges and that of New Ross, all of which were constructed by a Mr. Cox, a native of Boston, United States. For several years after our Dublin architect's proposals and plans were discussed, no immediate action was taken; but ultimately, in the case of Derry, in 1789, the "Irish Society" granted the corporation of that city a lease of the tolls of the ferry in perpetuity, to enable it to borrow money thereon to build the proposed bridge across the Foyle. This bridge was constructed at Boston, U.S., by Mr. Cox, at the cost of £11,000, and was brought to Derry the same year, and opened for passengers in 1791.

Concerning the bridge over the Suir at Waterford, we find a paragraph in the *Anthologia Hibernica* for February, 1793, as follows:—"The bridge so long talked of, and so universally wished for, at Waterford, will shortly be commenced, the size of which is to be fixed on the 27th. The commissioners appointed by act of parliament for building a bridge over the River Suir met, pursuant to a notice for that purpose, when no less a sum than £22,800 was subscribed, exclusive of £15,000 which the corporation are to pay the proprietors of the ferry. One-fifth of the sum subscribed was deposited in the hands of William Newport, Esq., who was appointed receiver by the commissioners."

The Derry timber bridge, 1,068 ft. in length and 40 ft. in breadth, connected the city with the village of Waterside, on the east branch of the Foyle. A turning bridge on the city side was substituted for the original draw-bridge. In 1814, 350 feet of the bridge was carried away by large masses of ice floating down the river. The repairs amounted to more than the original cost. The Government advanced on loan £15,000 for the reparation and incidentals, which amounted to over £18,000. The average amount of tolls some years since was between £3,000 and £4,000 per annum.

The timber bridge at Waterford connects that city with the suburb of Ferrybank, in the County Kilkenny. The bridge is about 832 ft. in length by 40 ft. in width, supported by forty sets of oak piers or trestles on stone abutments. It was erected at a cost of £30,000, raised by shares of £100 each, £90 of which was paid up. It was opened in 1794. This bridge has been often repaired, and for several years it has not been at all creditable to such a city as Waterford. We hope soon to see it displaced by a stone or composite structure. The corporation have already moved in the matter.

The timber bridge at Wexford, over the Slaney, constructed of American oak, cost £17,000. It was originally opened for traffic in 1795, but by 1832 it had decayed in parts very much. The corporation had it repaired at an expense of £6,000, of which £4,000 was raised on mortgage of the tolls. This bridge was 722 ft. long, with causeways of 648 ft. and 189 ft. at either end.

The New Ross timber bridge is also of oak, and is about 510 ft. long, with 150 feet of causeway. It was constructed in 1794, at a cost of £11,200, the produce of shares issued by a company under an act of parliament.

There are several other timber bridges in this country, but they are not connected immediately with our subject. None of Cox's bridges shewed any remarkable ingenuity in their construction; they were plain rough-and-ready structures suited to the wants of the times, yet costing a great deal more than they were worth. Had Semple's suggestions been carried out, and his hints been acted upon, strong and durable structures would have been erected by him, possessing some architectural features, whether entirely com-

posed of timber, or a combination of timber and stone. Essex Bridge, now being demolished, proved that he could build, not for one generation, but for many, in respect to good workmanship and materials. Modern wants call forth modern modes and necessities; yet, we dare say, had old Essex Bridge remained untouched by the hand of man, it would outlast by two or three hundred years several of the bridges that are now erecting.

Speaking about projecting bridges in country places, and on the subject of roads, Semple observes:—

ON BRIDGES AND ROADS IN GENERAL AND PARTICULAR.

"Before you fix upon the site of the bridge (if that be left to you to determine), you are to procure correct maps of the adjacent country on both sides of the river, view the grounds yourself, and consider not only the roads that are made, but also such roads as must be made hereafter; and then, summing all up together in your own mind, you are justly and impartially to recommend the best site for the bridge, that you are convinced will be most for the advantage of the public in general, without paying the least regard to any one particular proprietor of the adjacent lands, nor suffer yourself to be knowingly led into an error that may either injure your character, or prove prejudicial to the public, without fairly and fully extricating yourself from any charge that may afterwards be brought against you, let the after consequence be what it will.

"If a new bridge happens to be built in a country place, the public ought to be conducted to it, and that cannot be done without making new roads; in the execution thereof various difficulties may happen to be met with. There is no doubt but it will be designed that this new road will be carried in direct lines; perhaps part of a fresh-water lake may intervene, and frequently fresh-water lakes, quaking bogs, morasses, or the like, happen in the way to obstruct laudable designs, obliging the undertakers to carry the roads many miles about, to the no small disadvantage of the public. Now, let us endeavour to surmount these obstructions, and consider what eligible method may be pursued in order to carry a road in a right line through such places, not only to accommodate the public, but as being productive of various other advantages to private property, in draining or reclaiming flooded or boggy grounds by intersecting the current, and giving it a more advantageous direction."

[The above observations of Semple deserve as much attention at the present day as they did nearly a century since, when they were written. How often does it not happen that engineers and surveyors, instead of studying the interests of the public, are found to pay more consideration to the interests of individual proprietors in planning country roads and bridges? Not only in the matter of ordinary roads, but in the construction of railway lines, the public convenience is ignored to oblige particular land owners. Factionous opposition also is often given on the part of land owners to the laying out of certain common roads or railway lines, when they merely skirt their lands or pass over an obscure angle of it. We need not cloak the matter, but boldly declare that land owners' opposition is a mere pretence; they wish to be bought up at the public expense. It is a godsend to many owners when a railway line is projected to cross their property; and when it does not cross it, they are disappointed. When their wishes are gratified, they get up a violent show of opposition, and pretend that the value of their property is destroyed, and that no amount of compensation would represent their loss. As Semple says, in the projecting of a road or bridge no regard should be paid to any one particular proprietor, no matter how high his station might be; and an engineer or surveyor is false to his duty who allows himself to be influenced by any consideration to work any injury to the public interest. We have in our recollection an

instance where an old, short, and direct road-way passed through the grounds of a J.P. in the County Dublin. A presentment was actually obtained, through the influence of that worthy and one or two more, for a new road to displace the old. The new road was made to take a long circuit round the J.P.'s property, increasing the distance to be travelled by the public and the farmers to nearly a mile, whereas by the old road, which was included in the gentleman's lawn, the distance was about one-half. This act was one of monstrous injustice, and it was carried out altogether in the interests of an individual proprietor, who desired not only sylvan seclusion, but succeeded in filching a piece of public property, and obstructing the old immemorial "right of way." Until the railway era, we believe, there were few or no instances of bridges crossing rivers obliquely; and even now, with the exception of those used for railway lines, all bridges over rivers in cities and towns are built at right angles to the stream. Most old country roads wind greatly as well as undulate, and their winding features are clearly discernible as they approach within a short distance of a bridge, where it becomes necessary that they should veer so that they may meet it at right angles. Palladio, in his "Treatise on Architecture," gives some good designs for timber as well as stone bridges, and the principles he lays down have been adopted more or less until the present day. Price, in his "British Carpenter"—the first edition of which was printed in 1735,—seems to be one of the first who understood the system of forming curved ribs for the support of the roadway. His method shews a curved rib rising one-sixth of the opening, divided into a number of equal parts according to the span, to suit the length of the timbers. In a bridge of 36 ft. span he makes the ribs of pieces of oak in five lengths, and 8 in. in thickness, each rib consisting of two thicknesses, one 12 in. and the other 9 in. deep; the joints are crossed, and the thicknesses keyed together with wooden keys. He is of the opinion that two of these ribs with joists framed between will be sufficient to support the roadway. The celebrated wooden bridge of Schaffhausen was composed of two arches—one 172 ft. and the other 193 ft. span,—supported by abutments at the end and by a stone pier in the middle. Semple gives a design for a very substantial timber bridge with stone piers for a river where the tides rise to ten fathoms deep; it shows, like a roof, a king post, collar beam, principals, and main braces. He recommends the lower or principal braces to be made of sound, hearty, upright oak of 18 in. by 12 in. scantling, and that the king post may be the same, but all the rest of hearty and sound red fir. The principal beams lie one upon the other, but it would be advisable, he says, to lay slips of sound oak plank between them upon a slant, to run off the rain water, and particularly the outside ones, to keep them from rotting. The principals and two main braces have breaking cuts run through them, and are turned end for end and are bolted together. Prick posts or struts are introduced for strengthening between the principals and main braces. All these latter are scantling about a foot square, and each of the frames are placed about a foot apart from each other. The crown beam is 18 in. by 12 in. The flooring joists are 9 in. scantling, and are spaced 18 in. asunder; and on these joists the flooring planks lie, which are 6 in. thick. We shall let Semple describe the road or carriage way:—

"This floor may be first covered with pitch and tar, and then with common slates, and one or two courses of bricks on them laid in swimming beds of choice mortar, closely wrought and grouted. These slates are to preserve and prevent the mortar from corroding the planks, and over the bricks lies the pavement of the carriage way. These slates, bricks and stones, if properly executed, will effectually throw off the wet and help to preserve the timber; but do not forget that I have mentioned different methods for that purpose, but they are to be applied at your

own discretion. And I think it would also be advisable to have this bridge inclosed with a stone balustrade, at least over the arches; but in this case there must be frames placed together at the extremities to support the parapets, which must rest on a heading course of cut stone of about 4 ft. long each, and chain-barred, &c., for if it is inclosed with timber it will be a perpetual expense to keep it in order."

[Simple was of the opinion that a bridge constructed of the above description would last for a space of one hundred years without incurring any expense for repairs worth mentioning, provided that the pavement was allowed proper time to cement and plentifully strewn with gravel, and that due care was taken to prepare and preserve the timbers of the outside frames which are exposed to the weather. He alludes particularly to the necessity of preserving the joints, and of throwing off the water from rotting the ends or butts that go into the wall. Bridges constructed on the above principle were the kind that our old Dublin architect recommended to be erected at Derry, Wexford, and Waterford in the last century, but we have already described the ones that were erected instead.]

(To be continued.)

WHAT IS ADIPOCERE?

PREFACED BY SOME REMARKS UPON THE EXTRAORDINARY PRESERVATION OF DEAD BODIES IN THE VAULTS OF ST. MICHAN'S CHURCH, DUBLIN.

In the last number of the IRISH BUILDER the writer of the paper "Unknown Dublin" gives some interesting particulars in reference to the preservation of human remains in the vaults of St. Michan's Church, Dublin, and he adduces the opinion of a chemist early in the present century, stating "the walls were composed of a stone peculiarly calculated to resist damp and moisture." It is now several years since curiosity prompted me to see these remains. The vault which enclosed them is of very small capacity, and the bodies presented to me the appearance of dried parchment of fallow, dark colour, still shewing the lineaments of the face and contour of the entire figure. I remember well the joints were flexible, and the bones—which must have been in good preservation—were perfectly rigid.

The difficulty of accounting for the phenomenon which exists in this vault has puzzled many; indeed I do not think anyone has yet explained it, unless it may be the popular notion that the sanctity of the deceased has been the cause of the preservation of their remains. On this ground it is not my intention to enlarge; at the same time I think it may be accounted for from natural causes. In order in this climate to arrest decomposition, two requisites are absolutely necessary: first, complete exclusion from atmospheric influences; and, secondly, a temperature sufficiently high so as rapidly to absorb all exhalation. Exclusion from air for a considerable period is likely to have occurred; and if absorbent surfaces existed in immediate contiguity, this latter would have been produced; but that the stone of which the building is constructed could have effected this, is foreign to my notion. Calp—which, we know, is the material of the walls—is possessed of the very opposite properties, and condenses moisture in a very remarkable degree, from its close and uniform compact texture.

As animal substances are preserved where absorption and a uniformly dry temperature prevails—instances innumerable of which occur in warm climates, as when enveloped in sand or laid upon sand, causing thereby so rapid an absorption of fluids that decomposition is in fact arrested,—it follows, if similar circumstances are produced in our climate, either from natural or artificial causes, the same effects are likely to occur.

The immediate substratum of the entire of the district occupying both sides, in immediate contiguity with the River Liffey, is

composed of a bed or series of veins of sand varying in depth from 6 in. to 10 ft. or 12 ft., and this occurs more particularly on the northern side, where it stretches away to a very considerable distance from the river. St. Michan's Church is built upon this bed of sand; the foundations were, as a matter of course, excavated through it, and laid upon a substratum of hard tenacious clay. In former ages the principle of capillary attraction was not so well attended to as now. Foundations were laid solid; and what, in this instance, is the consequence? The entire interior surface is hermetically sealed up, and a depth of sand of vast area is preserved from contact with its surroundings—an immense absorbing surface. I know what a modern builder will say to this—"I would have dug out all the sand, and used it in the building"; but let him remember the entire district was then one vast sand-pit: this, modern excavation has proved.

Now it is easy to imagine that sand in such position, protected from all external influences, will become after the lapse perhaps of ages the most thoroughly absorbent of all surfaces known. I have said before the vault enclosing these remains was of small capacity, and I believe it to be surrounded by vaults of greater dimensions; and I know its external walls are not in contact with the adjoining graveyard. Here, then, we have a theory which will account for absorption upon an enlarged scale; and possibly, it may be, it is to this, and not to the stone of which the building is constructed, we are indebted for the preservation of these remains.

Instances of the almost entire preservation of animal substances, embedded in peat, are frequent; and in these it is often found that fatty matter predominates,—that is, the fatty portions remain, while there is, to some extent, a wasting away of the remainder. Fat, according to this experience, is calculated to last for indefinite time; but in the vault of St. Michan's Church we have no apparent trace of fat, at least to the non-professional eye; there is only the wasting away, which produces the dried up, emaciated representative of the Egyptian mummy, and no more, therefore it is not too much for me to say that examples, such as occur in these vaults, are very rare indeed. We have others on record; but there is generally evidence to show that artificial means have been used previous to interment, but no trace of such exists here. The drying process has been carried on by agencies unknown to us, which have hitherto baffled the researches of the most learned.

Some short time since, being in a company where the preservation of these remains formed a subject of conversation, a medical gentleman of eminence in this city informed us they were *adipocere*; and my experience being more in connexion with architecture and building than with chemical knowledge, I could not offer an opinion. Therefore I will conclude this paper by briefly describing what *adipocere* is, as the subject may be of interest. Towards the close of last century the name *adipocere*, from *adeps* fat, and *cera* wax, was first applied to human remains by M. Fourcroy, of Paris; but these were shapeless, unrecognisable masses, being human skeletons enveloped in a covering of fatty matter, left like a residuum after the wasting away of all other parts of the body. Curiously enough, in some instances, the quantity of this matter was much too large to suppose it had pre-existed in the living body.

In the year 1786, during some improvements in the quarter of Paris in which Le Cimetière des Innocens was situate, it became necessary to obliterate this receptacle of the dead, which had been in use from time immemorial. A commission of scientific men was appointed by the Government to direct the necessary precautions to be used in carting away the immense mass of putrifying matter it contained, and amongst them was M. Fourcroy.

This cemetery had been appropriated for many generations exclusively for the use of the poor, and an accumulation of human remains existed upon an immense scale; the

practice of interments being, that trenches were excavated of considerable length, and deep enough to hold some dozens of coffins piled one over the other. After each separate interment the coffin last deposited was merely covered over with a layer of earth, and so on until the trench became filled. The opening of one of these trenches, after being completely filled up and covered over by earth for fifteen years, I will give in the words of the report forwarded to the Government:—"The coffins were in good preservation; the covers being removed, the bodies were observed at the bottom, leaving a considerable distance between their surface and the cover, and flattened as if they had suffered a strong compression. The linen which had covered them was slightly adherent to the bodies. Beneath the linen was found nothing but irregular masses of a soft ductile matter, of a grey-white colour, resembling common white cheese, the resemblance being more striking from the print which the threads of the linen had made upon its surface. The bones which were surrounded by this matter had no solidity, but were readily broken by sudden pressure. The head was environed by this peculiar matter. The face was no longer distinguishable. The mouth was disorganized. No trace remained of the viscera, of the thorax, and abdomen, which were all confused together, and converted into this fatty matter; and this was also invariably the case with the brain. None of this matter was found in bodies isolated from each other, but only in those accumulated in common graves."

From experiments by Dr. Gibbes (*Phil. Trans.*, 1794), "it appears that muscular flesh, when buried in moist earth, is, by a peculiar kind of decomposition (scarcely to be considered as putrefaction), converted into *adipocere*." The same change occurs, to some extent, as I have before mentioned, with bodies embedded in peat, with this exception, that the greater portion of muscular fibre remains undissolved in the latter, and the skin remains perfect, but dark and discoloured. This I attribute, in both instances, to the tannic acid or tannin known to exist in bog material. But so many different theories arise with regard to the preservation of the remains at St. Michan's, it is difficult to arrive at a solution. Certainly there is no moisture there; and hitherto it has been generally agreed that this preservation is due to absorption alone, from whatever cause it arises; therefore we have yet to learn that *adipocere* may be produced from such sources. But things which were deemed impossible years ago have since become realized; and so, perhaps, may this. W. H.

THE BUILDINGS OF THE NATIONAL SAFE DEPOSIT COMPANY, LONDON.

ABOUT twelve months since the excavations were commenced for the foundation of this building, and the year has been occupied in getting up the work to the ground line. The foundation stone was laid a few days since by the Lord Mayor of London. During the excavations, numerous Roman remains have been unearthed, consisting of coins of the Roman Empire, pottery work, ladies' ornaments, chains, rings, weapons of war, and craftsmen's tools. The building is designed to be fire-proof and burglar-proof. The superficial area of the building is about 6,500 ft., and it occupies a site contiguous to the Mansion House, probably the most valuable ground in the city. The external and party walls are of extraordinary thickness and strength, and in the interior, which is completely detached from the outer building, there is constructed an impregnable vault 69 ft. long by 81½ ft. wide and 86 ft. high, divided into four chambers of four floors each, having a cubical capacity of 89,559 ft. and a floor area of 1,328 ft. The great vault is to be built on arches, so that the whole of it—top, bottom, and sides—will be constantly, day and night, under the view of the company's armed watchmen. It is further protected by

burglar-proof armour plating. The roof will be formed of semicircular arches, so that the whole structure will be effectually fire, burglar, and bomb proof. The doors, which are generally the weakest points of such a structure, will, in this case, be made quite equal in strength to the strongest part of the vault, being ponderous masses of impermeable metal and fire and drill proof cement, weighing four tons each. Mr. John Whichcord, F.S.A., is the architect of this colossal work, Messrs. Eastons and Anderson, engineers; Messrs. Peto Brothers, builders; and Mr. H. S. Greaves clerk of the works. The safe depositories are being made by Messrs. Milner and Son, of Liverpool by whom the doors are fitted with locks "so arranged that the depositor cannot unlock his compartment unless one of the company's servants is present."

The Lord Mayor, during a short address at the ceremonial, said—Apart from the objects of the building, the actual progress of the work itself had brought to light, in digging for a foundation, some splendid specimens of Roman art, and showing that in the time of the Romans the roadway of the city must have been from 80 to 40 ft. below the roadway of the present day. And if that was so 2,000 years back it was only reasonable to suppose that 2,000 years hence the roadway would be some 95 ft. above their heads as they stood there that day; and that might happily occur before the renowned New Zealander took his place upon a broken arch of London Bridge to sketch the ruins of St. Paul's. He expressed a fervent hope that as these antiquities had been found within the city they would be preserved to the city, where they would find a safe and fitting home in the City Library and Museum. His lordship, in conclusion, congratulated the company on the manner in which their work was being carried out.

The architect assured the meeting that although twelve months had been occupied in getting up the work to the ground line, which was by far the most difficult and dangerous part of his task, he hoped to rear the superstructure with such rapidity that its doors would be open for business in nine months from the present date.

THE PRICE OF GAS IN CORK.

A BOARD of Trade Inquiry was held in Cork on Wednesday, before Mr. Vernon Harcourt, into an application made on behalf of the Gas Consumers' Company, for power to increase the price of gas from 4s. 9d. to 5s. 6d. The grounds upon which the application was made were the extraordinary increase in the price of coals, amounting, in their case, to 80 per cent., and the increase in the price of labour and materials. The application was opposed by the Corporation, who allege that there was an undue amount of leakage, and that the company had unduly increased their capital. After evidence was heard from Mr. Lane, secretary, and Mr. Hill, engineer, on the part of the company, and from Mr. Stephenson, engineer, on the part of the Corporation, the inquiry closed; and Mr. Harcourt stated that he would forward his report to the Board of Trade.

THE ANTRIM IRON MINES.

We directed attention to these mines on a former occasion, and we are glad to hear that their working is proceeding satisfactorily. The ore, which is found to be very pure, is being largely employed in the Cumberland and Lancashire iron works; and quantities are also shipped for North and South Wales, and other inland towns. Among the companies already engaged in working the iron mines of this district are Messrs. James Fisher and Sons—to whom their discovery is mainly due; the Antrim Iron Ore Company, the Parkmore Iron Ore Company, the Knockboy Iron Ore Company, the Mountcashell Iron Ore Company, the Glenariff Iron Ore Company, and the Glenariff Iron and Har-

bour Company. These companies represent a capital of about £1,000,000 sterling, and they are opening out their mines on a very extensive scale. At the present time fully 600 horses are employed in carting away the ore, and about 700 men are at work in the mines. Our northern contemporaries give cheering accounts of the mining districts. The ore district, according to one, comprising an area of about fifteen miles by sixteen, chiefly along the sea-board between Larne and Cushendall, and extending within a short distance of Ballymena. We have little doubt that the completion of the railway between Ballymena and Cushendall will greatly develop the mining industry of the County Antrim, and lead to the employment of several hundred more men and boys in various ways subsidiary to the mining industry.

CIVIC LYRICS.—No. XLIX.

THE ENGINEERING DIFFICULTY.

Our Engineer, if he
Were housed by the Liffey,
Would find in a jiffy
A remedy soon
For odours inhuman,
Unless his acumen
Proves him an old woman,
Or Man in the Moon.

Now, what is resulting
From all his consulting?
Perhaps 'tis insulting
The question to ask.
Do Council o'erride him,
Or Committees chide him,
Or Town Clerk beside him
E'er bring him to task?

Does French e'er annoy him
When Chairmen employ him,
Or spirits decoy him
Away from his post?
And is he complaining
Whenever it's raining
"The city needs draining,"
Though drained dry almost?

What are the surprises
When Dennehy rises
To ride the Franchises,
And talk on Finance?
Does Byrne's oiled diction
(A frightful affliction)
Remove all the friction
Of Vereker's lance?

Sir Boyle Roche the Second,
Who spouts when he's beckoned,
Has always been reckoned
A bundle of chaff.
Who fails to remember
That fog in November—
The marble town member,
Too clever by half?

The Chairman's veneering
And weathercock veering
On gas engineering
And water supply,
Thinks our Printer's Devil,
Prove Mr. Parke Neville
Holds plumb rule and level
Are all in his eye!

Just give us the Curragh,
Oh Engineer thorough
Of this rotten borough;
"Twill do for a 'shoot'!"
Our scavenger enlarges
For lack of some barges;
Oh, hang the surcharges—
The Council can loot.

CIVIL.

OUR NATIONAL MUSEUMS.

In a recent number of *Iron* there appeared an article on the above subject, from which we take the following:—"The necessity and utility of museums is acknowledged; their very existence proves this. All that remains is to maintain them efficiently and economically, a work which is by no means well done yet, and probably never will be until some comprehensive scheme of management is adopted." . . . "The Albert Museum in Exeter is a type of the actually useful museum, where the artisan may see illustrations of manufacturing operations, and the artist

may find examples of the masterpieces of old. Here everything is neat, orderly, and simple; no object is without a label, which explains clearly what it is; and spectators need not wander about among collections of incomprehensible curiosities, which excite in their minds wonder, but no interest." . . . "If we are to have a good system of technical education, all our resources in the shape of museums must be thoroughly utilised in connection with it; and it will be no injustice to existing interests, or indignity to the memory of deceased donors, to totally re-organise the system—if it can be so called—on which our museums are managed. Unquestionably this is a great scheme, and one which must be attempted, if at all, by the Government. Vested interests will, as always, rise in opposition, but public opinion must insist on the best possible use being made of public property, whether in museums or elsewhere."

THE ROYAL HIBERNIAN ACADEMY.

AGAIN we notice a symptom of the renewed vitality of the Royal Hibernian Academy—we observe that it has actually elected a new "Professor of Anatomy." Hitherto this officer has been purely ornamental. It was a far-sighted provision of Francis Johnston to include such an office in his scheme for the foundation of an Academy of Arts; but unfortunately throughout many years the founder's prescient scheme for a corporation has existed but in skeleton. We noted as a curiosity, that each year the Academy gravely "elected" its several Professors of Anatomy, Architecture, Painting, History, &c.; but the "professors" were dumb, and might, for anything the art world was the better of them, have been shades on the banks of Styx. We had ceased to note even the names which were inscribed under the empty niches year after year—this year we observe a variety. A new name on the list arouses momentary interest: Dr. Charles Cameron is "Professor of Anatomy." Now we know this means something more than a "skeleton" title. Dr. Cameron is not the man to rest easy in a sinecure office. He is more of that type of whom Goethe spoke—"Man who must as devil be doing." We mean no disrespect to the busy, active Professor in the comparison. We are prepared for the superficial criticism that will be passed on the inconsistency which has appointed a distinguished chemist to a Chair of Anatomy; but we know how really worthless and shallow such criticism is. We know how thoroughly capable Dr. Cameron is, with his great versatility and real genius for oral instruction, of ably demonstrating that view of anatomy which affects the practice of the Fine Arts. We know also that the Academy has deliberately and with forethought made its selection. The members have intelligently divined a want which the founders of such academies did not forecast, and have seen an opportunity to obtain from their "Professor of Anatomy" some much-wanted enlightenment on the nature of pigments, and the comparative durability and value of different media of Art.

Than Dr. Cameron there is no one more capable of giving us much novel and instructive information in this branch of chemistry. We challenge the new Professor to set an example of practical activity to his brother professors—to venture on the startling innovation of professional lectures—to tell us something of the chemistry of colours, and its action in the processes of oil and water media. That Dr. Cameron will not fail to deliver some discourses on his more legitimate theme of Artistic Anatomy, we have no doubt.

We have heard such surprising things of our once moribund Academy of Arts in its renewed youth—of its being out of debt, and held in respect by its banker—of its sales trebled within two years—of the hearty co-operation and harmony among its members—that we should not be surprised to see the professors actually lecturing. We can conceive Mr. M'Carthy holding up the Seven

Lamps of Architecture to a college of rising Christopher Wrens and fiery youthful untamed Pugins of native growth. Then may we see, perhaps, Mr. Gilbert descanting on the ancient history of the arts in this island, or what the Irish people did for Art in the last century, ere yet South Kensington and King Cole had undertaken its dry-nursing; or we may have him calling up for us some of those historic incidents of Ancient Dublin which would furnish great subjects for the historical painter. Let us hear him tell, we shall say, his fellow-academician, the Hon. Lewis Wingfield, how and with what surroundings he might picture for us some scene laid within the walls of old Christ Church Cathedral,—say the "Crowning of the Pretender, Lambert Simnel," or his being borne thence "on the shoulders of Great Darcy of Platten." Historical painting is at a discount with us. Could not the Professor of History do something to call its spirit from the vasty deep?

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood is still occupied with the continuation of "The Parisians." An article on "Temper" is a keen criticism. There is a large space devoted to this month's number to critical notices of new books. As usual, the magazine is remarkable for its several onslaughts on the measures and policy of the Liberal Government.

Tinsleys for this month maintains its reputation as a popular shilling's worth. "Laura Erle" progresses to its forty-second chapter, and will, we presume, be concluded in next month's issue. The French story "Filoubon, and the Little Marie" is a pretty piece of light reading suitable for the gentler sex. The short paper "Concerning Friendship" is a thoughtful one, and worthy of perusal. Of the poetical pieces there are none we can name as of more than average merit.

Fraser has several interesting and readable papers. Professor Newman contributes a learned paper on "The Authorship of the Odyssey," contending in an argumentative manner, and with considerable effect, that the author of the *Iliad* was not the author of the *Odyssey*. Critics here and there will, no doubt, take up the cudgel for blind Homer. The professor contends that the two poems belong to different eras. "British Policy in Persia," by Mr. Ottley, is pretty severe on British interference with Persia. The other articles are varied and well written.

The *Gentleman* has another instalment of "Clytie"—a very interesting tale. The "Kabyles," the inhabitants of a province in French Algiers, is a pleasant sketch, by Mr. Vizetelly. "Making the Worst of It"—a romantic story by Mr. Hopkins, and "Pilgrimages," are good papers. "Dartmoor, the Scene of the Autumn Manœuvres," is well described. In "Table Talk" we have some interesting traits of the social life and refinement of the colliers. The following extract is not bad; the scene is laid outside Glasgow, and is reported as a fact:—

"Two young colliers from Carlisle drove down in a waggonette to a coal pit near Wishaw for the purpose of inspecting a working place which they had secured from the underground manager on the previous day. They were extravagantly dressed, and wore heavy gold watch chains. They had rings on their fingers and gold-headed canes. On driving up to the pit they asked a man who happened to be near if he would 'haud the horse,' and they would give him 'something tae himself.' The man agreed. Our two friends went down the pit, inspected their 'rooms,' came up again, and on the pit-head held the following consultation:—First Collier: 'Hoo muckle will we gie that cove for haudin' the horse?' Second Collier: 'Oh, dasht, we'll gie him a shilling. He's a hard-up-looking sowl. Accordingly the 'hard-up-looking sowl' received the shilling, touched his hat, thanked them, put the coin into his pocket, and retired, with a queer smile struggling for a place on his features. He was the proprietor of the colliery. If a little extra money in wages has already made such a change in 'Geordie,' what will the educated pitman of the future be like?"

Temple Bar has three or four very good papers. Mr. Whyte-Melville's story of "Uncle John," "The Decay of Country Delights," and "Random Sketches in Natural History" can be commended for pleasant reading.

St. Pauls has, among some agreeable contributions, the following two attractive papers:—"George Herbert as a Lover of Nature," and "Evening Longings."

Macmillan for this month has a somewhat exhaustive and excellent paper on the "Public Service," by Mr. Rowsell. The serial story, "A Princess of Thule," by Mr. Black, continues well. Mr. Simpson contributes a paper on "China's Future Place in Philology," which throws some curious and odd light on the peculiarities of the language of the Celestial Empire. Mr. Burnand continues his paper on "My Time and What I've Done with It." It is readable, but not very remarkable. The remaining papers call for no particular notice.

Cornhill has a number of interesting and instructive papers. The "Growth and Decay of Mind" is very well discussed. "Granges and Farmers' Clubs in America" is a pleasant and amusing sketch. "An Old Dutch Literary Jest" can be commended, and so can the papers on "Tyrolese House Mottoes" and "Hours in a Library." The story "Young Brown" improves on acquaintance. On the whole, the magazine is a good number.

Belgravia supplies some sketches this month which will not fail to amuse Irish and English readers. The cosmopolitan George Augustus Sala treats us to a good sketch entitled "At the Bar." It is the story of a rapacious creditor, and Mr. Sala's vein of satire is exercised very well indeed. He ought to know something about rapacious creditors and insolvent debtors. "Irish Crime" is a bit of irony at the expense of the opponents of the Irish Church. "The Ashantee Country" will interest readers just now in consequence of the complications in that warlike place. "Doing Business in Paris," by Mr. Meason, and Mrs. Read's little story, "Her Master," will afford interesting reading. Miss Braddon's "Lost for Love" promises well.

St. James's for this month has a variety of matter which cannot fail to please several. "What is a Cockney?" by Cadwallader Waddy, is an amusing sketch, but the Cockney in all his moods and tempers is still a nondescript animal. Educated or uneducated (is the Cockney ever educated?), the biped of London's central nooks and crannies, is developing new features every year which laugh education to scorn. The School Board will have tough work to accomplish before Cockney barbarisms in language and manners are eradicated. "Work," by Miss Alcott, is a good paper. "Among the Pictures" is a criticism fairly done. The piece of poetry entitled "Lost," is simple, but breathes a good spirit.

London Society has a fair supply of stories and other matter. "French Novelists" includes a notice of Eugene Sue, but not a full one. Mr. Henry Kingsley contributes "Her Majesty's Ships,"—a readable paper. A dramatic novelette, entitled the "Dove's Nest," by Mr. Joseph Hatton, is a light and amusing paper. "The Loan Exhibition of Decorative Art-Needlework," by Mrs. Palliser, is a good paper, and worthy of notice. "No Intentions," a story by Florence Marryat, is continued. Mr. Perceval Graves, who has written some good poetry, and some very washy specimens, contributes some fair lines on the "Wreck of the Aiden."

Fortnightly Review has an excellent and able paper on "Purchase of Railways by the State," by Mr. Galt. Before any Government scheme is considered, the writer thinks that we should first be satisfied on the clearest evidence that such a purchase would be a public benefit, and not a public loss and risk. We have certainly been advocates for the Government purchase and working of railways; but, we agree with the writer, caution is first necessary. If the railways are to be purchased in Ireland, we think they should

also be purchased in England and Scotland. Mr. Herbert Spencer replies to his various critics. Mr. Myers criticises in a scholarly way Mr. Jebb's Translations. "Lady Anna," a rather startling story by Mr. Anthony Trollope, advances four more chapters this month.

MARCELLA BROCAS.

IN relation to the notice of Marcella Brocas and her brothers in last issue of the *IRISH BUILDER*, we have received the following from a correspondent:—

"Particulars of the Brocas family—two members of it having been chaplains of the Royal Chapel of St. Mathew, Ringsend—may be found in the Rev. Beaver H. Blacker's "Brief Sketches of the Parishes of Booterstown and Donnybrook, County Dublin, with Notes and Annals," etc. Dean Theophilus Brocas was buried at St. Anne's, Dublin, 1770, and a copy of the inscription is given on page 42."

CLEICUS.

[We are obliged to our correspondent for reminding us of these entries, which we may refer to shortly in connection with other matters relating to the Brocas family.]

A FLOATING CHOLERA HOSPITAL FOR DUBLIN.

A FLOATING cholera hospital has been built by Messrs. Bewley, Webb, and Co., North Wall, and is ready for service. It is not a very large craft, but it will supply accommodation sufficient perhaps for ordinary times. A daily contemporary describes it thus:—

"The vessel, which has been built in about six weeks, is of rectangular shape, 57 ft. in length over all and 28 ft. broad. It is simple in appearance, very substantially built, and well suited to its purpose. A broad ladder is fastened at one end of the deck, which can be let down when required for the admission of patients. Another broad staircase leads from the deck, or, so to speak, the roof of the hospital to the wards below, of which there are three, the vessel being divided into three compartments, which, by means of sliding doors, can be completely shut off from each other, if necessary. Each ward holds six beds, and might be made to hold more. There is at one end a kitchen and the nurses' room; at the other is the surgery. The sides are devoted to stores and to various other minor details of construction. The height from the floor of the wards to the skylight, which runs along the centre of the upper deck or roof, is 10 ft. 6 in. While the discussion was proceeding some short time ago in reference to the providing of hospital accommodation for persons arriving in the port affected with cholera, it occurred to Mr. Bewley to draw a design for a floating hospital, at a third of what would be the cost of the old war ship near the Pigeon House Fort, for which an application had been made to the Admiralty. He submitted it to the Board of Guardians of the South Dublin Union, who approved of it, and gave him the order for its construction. Thus simply the difficulty was solved. For the idea, however, of a floating hospital in the river the citizens are indebted to Mr. Byrne, T.C., with whom the project originated. The vessel is now completely ready for use. A captain has been put in charge and four medical gentlemen, Dr. J. G. Burne, Dr. Mapother, Dr. Cameron, and Dr. Minchin, have been appointed to her."

There is one point in the above statement which we cannot pass over without correcting. The idea of a floating hospital or its suggestion did not originate with Mr. Byrne. That Mr. Byrne may have made himself active in the matter of providing a floating hospital, we do not care to dispute, but the question of providing a floating hospital for Dublin was suggested by a writer in the pages of our contemporary the *Builder*, and in our own pages by the same writer some years since, and repeated at different times within the last two years. If Mr. Byrne can claim a priority in the matter, let him furnish us with day and date of his suggestion, and we will gladly publish the fact. It is a small affair to take credit for, but we are anxious to do justice to everybody, and we insist upon accuracy in public statements.

ASPHALT: ITS NATURE AND USES.*

(Continued from page 294.)

THE asphalt quarries of the Val de Travers in many cases fell into other hands. Various private individuals successively owned the concession under varying conditions, and for shorter or longer periods. Gradually the industry created by Eirinis fell off, probably in consequence of the great expense of transport; the oils existing in the asphalt were alone distilled for the purposes which the medical knowledge of Eirinis had pointed out, and from which branch of the industry an enormous profit could be reaped by practising upon the credulity of the sick. Thus it happened that the fame of the Val de Travers and its asphalt survived only in a few learned works, and that the discovery, together with the discoverer, were entirely forgotten in industrial circles towards the beginning of the present century.

In 1802, south of Geneva, at Seyssel, on the frontiers of France and Savoy, there was discovered a centre of rock asphalt, which soon became used for similar works to those of Eirinis, although the latter was unknown to the persons interesting themselves in the matter. For a very long time mineral oil had been seen at this place. It was found in a sandstone which is very common through the Rhone countries. Its strata lie almost horizontally in the Rhone basin, and rise some 200 to 300 metres above the river level. Throughout the whole region as far as Geneva, as far as the river Rhone from the frontier between old French territory and Savoy, it is bituminous in isolated spots. As in all other places where bitumen is found in sandstone, and not in sand, it is very irregularly distributed, as the hard or soft conformation of the stone admits of its absorption by capillary attraction. This bituminous portion of the sandstone was and is obtained in those banks at about the level of the valley by running in galleries, the irregular course of which follow the actual bitumen beds, the stone being taken out by boring and blasting. This bituminous sandstone is broken up, boiled with water for hours, then skimmed, and the mineral tar thus skimmed off again boiled to separate it from the suspended sand, which sinks to the bottom, and by evaporation it is freed from the water contained in it. In such an awkward process, perhaps three to four per cent., and often only two per cent., of the weight of the sand was obtained of mineral tar.

A branch of industry of such a wretched and expensive nature received a new breath of life on the discovery at the beginning of the century of a limestone rock belonging to the Jura formation above the quarries, which contained 10 per cent. of bitumen. Although the superficies was very much smaller, it appeared from the strength of the outer unstratified mass to offer an inexhaustible material for industrial enterprise, when the method of preparing a mastic from the meal of the bituminous limestone, with an addition of 5 to 10 per cent. of mineral tar, had been discovered.

The application of this project at Seyssel—regarded as something quite new and extraordinary, as no one had heard of former experiments—did not proceed in the simple way which Eirinis had adopted; but after some preliminary and very successful trials, asphalt was declared to be good for all sorts of things, and was lauded in the most extravagant manner by some, and accepted by others with unusual readiness. Reaction could not be long in setting in, and scarcely had the Seyssel asphalt come into fashion, ere it became an object of universal ridicule and contempt.

One after another the inventors were ruined, it being easy for an intelligent man to become convinced of the multiplicity of uses to which asphalt is applicable, but very difficult to induce a similar conviction in the minds of the prejudiced many; and still

more onerous is the task of overcoming the opposition of technical builders, who find themselves thrown out of their groove by the introduction of such a new material, and even if compelled to use it by the orders of the masters, they always bring it into disrepute by an ignorant and blundering employment of it.

At the end of twenty years the whole matter was so ruined that the quarries and factories at Seyssel at length came to a total standstill. About 1832 Count de Sassenay bought the property in its ruinous condition. It was owing to the conviction that the industry of asphalt had still a brilliant future before it, that the Count ventured to take up an enterprise in such entire discredit, and invest new capital in it, after two years' total inactivity at the works. But by this Count de Sassenay became the second founder of modern asphalt manufacture, and deserves to have his name mentioned beside that of the Greek Eirinis.

On an examination of the reasons for the failure of the Seyssel asphalt, the Count speedily saw that the chief cause lay in the wrong application of the product, which, badly utilised in foreign countries in unskilled hands, caused the material to be discredited instead of the persons carrying out the works. To this aspect of the question the Count therefore turned all his attention. By experiment, he ascertained the best method of using asphalt to be that of a fusible mastic, and by making slight changes in the process—apparently of the minutest kind—he effected great improvements. He also turned his attention to the sole application of the natural substance, and put aside all the other fanciful projects which had wasted the means and time of former inquirers. He also erected a factory for the study and proper fabrication of asphalt, and all the works ordered by Government were exclusively conducted by this establishment, and by labourers specially educated for the purpose. In a few years the reputation of the substance had entirely changed. Great market places and public halls were laid in asphalt cement, and all the fortresses of France were protected against damp in the principal parts by coverings of asphalt. At this time was constructed the well-known footway of the Pont Royal, and the fine asphalt pavement of the Place de la Concorde in Paris, the footway of the Morand Bridge at Lyons, and the coverings of the casemates as well as the interior walls of the corridors and magazines in the fortress of Vincennes.

These circumstances gave the French their superiority in the industry of asphalt, which they have maintained above all other nations to the present day, a superiority they are likely to retain for a lengthened period; and they may with justice name Count de Sassenay as the founder of their pre-eminence in this branch of manufacture.

It was in Seyssel or Pymont that the improvement over the system of Eirinis was made, already mentioned, i.e., the substitution of natural mineral tar for ordinary pitch. Local advantages brought this to pass. Had there been mineral tar in the Val de Travers, the invention no doubt would have been made there. But in Seyssel mineral tar had long been known and used before the rock asphalt was discovered. It was almost a natural circumstance that the viscous mineral tar of the neighbourhood should be used, instead of importing pitch from foreign countries; but that it was in itself an improvement was not observed until experience had shown such to be the case at a later time. But a second improvement in the manufacture is to be ascribed to the local position of Seyssel—the addition of rough sand to the composition.

The river Rhone carries down a sharp sand of various grit, and it was not too far away to induce the trial of mixing it with the mastic. It was soon found that instead of deteriorating the mastic it improved it, in the same way as in lime or cement it gave greater firmness and resistance. Experience soon showed in what proportion this sand should be used, from a tenth part to a fifth

being found the quantity. This materially reduced the expense of the asphalt composition, especially in sending it abroad.

Greater attention was now given to the capabilities of asphalt as foot pavement than when it was only confined to the cementing of moist walls. In pavements where the wear and tear is considerably increased, the firmness now obtained by the admixture of sand told greatly in favour of its use. It was also found that if the surface while yet soft was strewn with fragments the size of peas and beans, this again materially decreased the wear and tear. It is not certain whether these improvements are to be ascribed to the Count de Sassenay. It is sufficient to say that through him, and under his management, the Seyssel asphalt obtained a world-wide celebrity, and has been used everywhere with the greatest success.

The cities of France furnished the greatest market for this industry, especially Lyons, favourably situated near the quarries of Seyssel, and next Paris. But in England, North America, and Russia, asphalt has begun to be used in great cities; the terrace of the Imperial Palace at St. Petersburg is laid down in asphalt.

THE POLLUTION OF RIVERS.

THE first volume of the fifth report of the Commissioners appointed in 1868, to inquire into the best means for preventing the pollution of rivers has been issued. Though confined to investigations and observations connected with the chief industrial towns of England, Scotland, and Wales, yet the conclusions drawn have a similar bearing upon the rivers of Ireland. This report deals with pollutions arising from mining and metal manufacture, and to create a sufficient basis of the facts on which to found recommendations in regard to this class of pollutions, they have carefully inspected the mining districts of Cornwall, Devon, Derby, and the North of England, Scotland, and Wales. They have examined the processes by which tin, copper, lead, zinc, manganese, baryta, and arsenic ores are separated from the mineral matrix in which they are held. They have witnessed the process of washing the china clays in Cornwall, whose finely divided refuse mineral matters whiten some of the Cornish streams; and they have watched the process of washing small and shaly coal in Cumberland, Derbyshire, and to some extent in South Wales, by which some of the rivers of those districts are most offensively blackened. They have also been conducted over various metal manufactories, tin-plate works, and galvanising works, nickel and German silver works, and other metal industries in Glasgow, Sheffield, Kidderminster, Warrington, and Birmingham, from which certain deleterious mineral discharges drain into sewers and streams. They have taken samples of river waters, liquid discharges, and deposited muds in all these cases, and submitted them to examination in their laboratory. And they have held public meetings for the reception of complaints from owners and tenants of river-side lands, from fishermen, and residents near rivers injured by any of these industries; and on the other hand for the reception of evidence of the local and national importance of the industries to which the injury complained of has been owing. In this way they have held public inquiries at Penzance, Redruth, Liswithiel, Bodmin, and Liskeard, in Cornwall; at Tavistock, in Devonshire; at Newport, Cardiff, Merthyr, Swansea, Aberystwith, and Machynlleth, in Wales; and at Chesterfield, in Derbyshire; and they have personally inspected mines, and works, and streams, in the river basins of the Povey, Red River, Camel, Seaton, Tidi, and Fal, in Cornwall; the Tamer and some of its tributaries, and the Teign, in Devonshire; the Usk and Ebbw, the Rumney, Taff, and Tawe, in South Wales; the Rheidol, Ystwith, Carach, and the Dovey, with the upper tributaries of the Severn, in Cardiganshire and Merionethshire;

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.

the Derwent, in Cumberland; certain tributaries of the Tyne, also the Wear and Tees, in Northumberland and Durham; the Elvan, in Lanarkshire; the Rother, Don, and Derwent, in Derbyshire and Yorkshire; and the upper tributaries of the Trent, which receive the drainage of the large metal working town of Birmingham. The Commissioners seem to have received the cordial assistance of the corporate and local authorities everywhere, and of the miners and manufacturers; and a large number of correspondents have answered their queries. They have followed the precedent of former reports, first describing the industrial processes of which the complaint is made with the river pollution, which they produce, and remedies are suggested or given applicable to the different forms of pollution.

The Commissioners thus state their conclusions, and we would call particular public attention to them in this country on the part of corporate bodies, and manufacturers in general, as many rivers and streams in this island are being polluted, to the almost complete destruction of the rivers themselves and sources of our fish supply, and the danger of the public health:—

"We are of opinion that any law having for its object the prevention of river pollution should—1. Absolutely forbid, under adequate penalties, the casting of solid matters into river channels; 2. Enact the foregoing standards of purity, below which any liquid discharges into watercourses should with the exceptions already mentioned, be forbidden; 3. Give power to all manufacturers in towns, except those of gas, paraffin oil, pyroligneous acid, animal charcoal, tin-plate and galvanised iron, to discharge their drainage waters into the town sewers under suitable regulations; 4. Confer additional powers on corporations, local boards, manufacturers, and mine-owners, to take land compulsorily under 'provisional order,' for the purpose of storing their waste refuse, or of cleansing sewage or other foul liquids, either by irrigation, filtration, or otherwise.

"We are further of opinion that the equal and efficient administration throughout the country of any act that may be passed for these purposes would be best secured by the appointment of inspectors, to whom should be committed the duty of detecting and proving offences against the law, and of procuring the conviction of offenders. We are, moreover, strongly of opinion that in order to secure the independence of these inspectors from local influences they should, like the inspectors under the Alkali Act, hold the appointment from government.

"On the formation of conservancy boards with limited authority for local taxation, and power to authorise and direct expenditure for the purpose of river improvement,—as, for example, in the purchase and removal of weirs, the straightening and deepening of water-courses, and the formation of upland reservoirs—we have already stated our opinion in our report (1870) on the Mersey and Ribble basins, p. 136. There is undoubtedly a large field for useful work in every important river basin both in England and Scotland for a conservancy board of this kind; and it is certain that whenever the necessity of the various river improvements, which it would direct and superintend, shall have become urgent, a representative body of this kind will be indispensable, having power, in connection with the local and corporate authorities within the river basin, to levy rates for defraying the cost of whatever operations it may direct. But we are convinced that the thing of immediate and imperative importance in connection with river improvement throughout the country is simply the prohibition, under adequate penalties, of the gross pollution which at present renders so much of the running water of this country useless to manufacturers, agriculturists, and the public generally.

"The conclusions which we thus humbly submit to your Majesty have been arrived at after an inspection of nearly every town and district in Great Britain where any manufac-

turing or mining operations of importance are carried on. We have, moreover, personally examined during the past five years, 49 woollen factories, 14 works on which cotton is dyed, printed, or bleached, 16 chemical and alkali works, 10 linen, jute, and flax mills, 5 silk mills and dye works, 19 paper mills, 4 paraffin oil works, 4 alcohol distilleries, 4 starch works, 4 tanneries, 1 sugar factory, 2 soap works, 1 salt work, 5 cutlery works, 1 nickel foundry, 4 German silver and electrotype works, 5 brass foundries, 8 wire, tin-plate, and galvanizing works, 3 iron works, 69 mines, besides 48 works for the purification of sewage; and the standards of purity below which we recommend that all liquid discharges into river channels be forbidden have been adopted after an investigation which has involved no fewer than 1,200 analyses of the various drainage waters which offend them, before and after the various modes of treatment which we have investigated, in addition to more than 2,000 samples of river and other waters before and after pollution."

A "WORKMAN'S CITY."

In the locality of Wandsworth, one of the suburbs of London, a body known as the "Artisans, Labourers', and General Dwellings Company" (Limited), have been engaged in founding what has been called a Workman's City. The object of the society is "to assist the working classes to obtain improved dwellings, erected from the best designs, at the lowest possible cost; to become owners of the houses they occupy; to raise their position in the social scale; to spread a moral influence over their class, tending to foster habits of industry, sobriety, and frugality." The society—which reckons amongst its shareholders large capitalists like the Rothschilds, Barings, Brasseys, Morrisons; and nobles like Lords Salisbury, Derby, Shaftesbury; and merchants like Samuel Morley, with numerous bishops, clergymen, clerks, small tradesmen, and working men—is not an ordinary building society, although it builds; and, though it lends and receives deposits, it is neither a loan association nor a bank in the common acceptance of the terms. With a capital of a quarter of a million, the association does not in the first instance strive to make money; yet it pays a dividend of six per cent.

Lord Shaftesbury, who takes a great interest in the enterprise, laid the foundation of this city, and it is called after him the Shaftesbury Park Estate. It is not yet, of course, complete. When finished, it will contain no fewer than 1,200 houses; and, giving an average of six occupants to each, there will be a population on the property of over 7,000 persons. About 200 houses are now finished, and every single one that is finished is occupied, or, at least, secured. Some families have been living here for four or five months, and express themselves well satisfied with the houses and the terms on which they hold them, as, indeed, they well may. For here the clerk, or artisan, or labourer, may find a house, perfect in all its sanitary appointments, and well finished and fitted, for as little as 5s. 6d. a week, rates and taxes included. This class of house contains five rooms, having on the ground floor a parlour and a kitchen (with dresser and kitchener), a scullery fitted with a copper, a fire-place, and a sink, a larder, a closet, an ash-pit, and a coal-cellar; while on the first-floor are two bed-rooms, with a good wardrobe cupboard. Everything is substantial, and as well finished off as in many houses at treble the rent. To buy the house on a 99 years' lease from 1872, and subject to only a 1s. a week ground-rent, is as easy as to simply rent it. It needs only, if a man's character is satisfactory, that he pay down a quarter's, or even a month's rent, in advance. Thus he would pay, buying this house, twenty-five shillings and sixpence per month for a period of 21 years, or thirty

and sixpence for 14 years, or thirty-seven and sixpence for ten years, and so on; or he can have the whole premises conveyed to him for £150 at once. The whole of one terrace of these houses has been bought by those who are occupying them; and nearly all the other occupied houses, of whatever class, are similarly purchased, preference being always given to a candidate who is a buyer rather than a mere occupier. The next class of houses has an additional bedroom built over the scullery. The seven-roomed houses have back and front parlours, kitchen and scullery properly fitted, and all other conveniences, with three bed-rooms upstairs. The first-class houses, which let at £26 per annum, have eight rooms, back and front parlour, the latter with bay windows, all conveniences, including very nice kitchen, and three bed-rooms, with a bath-room. In every respect these houses are fully equal to an average "builder's villa" at 40 guineas a year. Every house, whatever its class, has a covered slate tank, with water laid on to the sinks and coppers, and gas is also laid into every house. Each house has a little piece of ground, part of which is laid down in concrete, so that the waste water is carried into a grating, and there can never be any slops lying about in puddles. Nearly all the houses have fruit trees in their gardens, for part of the property was an orchard, and one of the tenants of the cheapest class of house has had between three and four bushels of pears already off his tree. All the foundations are laid in concrete, which ensures dryness; no house has a drain running under it, which guards against malaria; every room is ventilated by air shafts in the walls, and by ventilators that can be opened or closed at will; and every dwelling has its own little forecourt, enclosed by a separate gate, and an ornamental railing. In every case the workmanship is as good as it can possibly be, irrespective of the question of cost; and yet the fourth class houses sell for £150, and the very best for £310.

The estate will have a large central space of some three acres laid down as a recreation ground and gymnasium, and in every street will be planted trees along the kerbstone, one being already beautified in this way. There will be a huge central co-operative store; there will be baths and wash-houses; there will be schools, a library, and a fine central hall, available alternately for Church of England and other worship, and on week days for concerts, lectures, penny readings, and the like; and there is already a temporary, though commodious, and even beautiful hall. Exceedingly good taste has been shown in everything; but no money has been wasted. It is by buying upon a large scale that the company has been able to sell at the prices at which it continues to offer houses as they are finished; but the company has not forgotten that really tasteful work costs no more than slovenly work. The façades of the houses are models of neatness. Banded brick, well pointed, and here and there relieved by good grey cement, has been utilised in a Tudoresque style by Mr. Robert Austin, the architect, but nothing has been sacrificed merely to the effect. Every house has plenty of light, plenty of air, plenty of cupboard accommodation, and the roads have been laid out widely, the footwalks being of asphalt. At the wish of the present tenants, as well as of the directors, it has been determined that no beershop or tavern shall be erected on the property; but no preference is given to temperance tenants as such, although temperance as an element of thriftiness is one of the points which the company hopes to bring home to the minds of its tenants.

The above is a summary of the objects, buildings, and surroundings of the "Workman's City," the formal opening of which took place on the 8rd, when Lord Shaftesbury, and several other distinguished persons interested in the enterprise, attended. We trust the dwellings are all equal to the description, and that cleanliness and comfort will be the result. The enterprise is worthy of imitation on this side of the channel.

THE PRESIDENT'S ADDRESS.

ARCHITECTURAL ASSOCIATION OF IRELAND.

I HAVE once more to thank you for the honour you have done me in re-electing me as your President for the second year of office in the service of your association. I have only to repeat that I shall be happy to do all in my power to advance its interests, and, as far as time and opportunity permit, I shall be with you. I have to express my great regret that a combination of circumstances over which I had no control should have deprived me of the opportunity of being amongst you on many most interesting occasions.

The association has advanced very steadily since its formation; it has a large number of members distributed throughout the country, and I am happy to learn that its ranks are still swelling. I believe, if its objects were thoroughly understood, that it would ere long embrace the greater number of at least the younger members of the profession. The business of the past session has been very fairly gone through. The Class of Construction has been well attended; the discussions on the papers were, as a rule, well sustained, and I have no doubt whatever they will spread a great deal of most useful and necessary knowledge. It is natural to expect that at first some of the members should be slow to join in the discussions, fearing that perhaps they would display ignorance on the different points; but this fear will quickly disappear if they only remember that they meet in a friendly spirit, and it is not necessary to let any feeling of delicacy or fear influence them. The answers sent in for the prizes in this class were, many of them, of high merit, and richly deserve the reward selected by the committee.

The designs submitted in the Class of Design proved of great interest, and the discussions raised on them at the meetings proved not less interesting. Many of the members were most earnest and industrious, and submitted a large number of sketches, many of which were very beautifully drawn, and displayed a large amount of originality. Some of those sketches you have an opportunity of inspecting, and therefore I need not dwell at length on them; I have only to say that I have no doubt you would endorse my selection for the prize.

The several papers read by the members were full of interest, and must have been of the greatest service to the younger members of the association particularly. I regret that on several occasions so very few of the members should have been present, and I would impress on them the necessity of attending in large numbers, to prove by their presence that they appreciate the efforts of those who, at great labour and inconvenience, give up so much of their valuable time in your service.

Another feature in the programme I have to speak of is the visits paid to the different buildings in progress. This is a portion of the work of the association to which I cannot too strongly recommend your attention. It is, perhaps, one of the very best forms of education to be found. The excursion to the members to the interesting ruins of Trim and the neighbourhood was a very worthy termination to the labours of the association, and proved to be one of the most pleasant portions of the whole work. I hope to see the day when the whole of the members will take advantage of the opportunities which such gatherings offer for the real advancement of the knowledge of architecture. It is in visiting these fine old ruins that we drink in those truths which they so beautifully express. There we may form our tastes, there we may learn to overcome difficulties of construction, there we may get a knowledge of how to treat our different materials, and there we may work out the uses and purposes of the buildings. I would, therefore, say to you, love those buildings; visit them as often as you can, and sketch them as much as you can. The pleasant journey of the day, and its successful wind-up, when the members dined together, and discussed the various points raised during the excursion, brought the session to a close.

I would endeavour to point out to you the means by which, if you are industrious, you have the power of supplementing the information received in your principal's office. You have the actual building, the workshop, and the sketching tour; and, besides the prizes offered by this association, you can compete for those offered by the kindred societies. The publication of the transactions in the architectural and other journals, give you the best information to be had; and then you have photography in all its phases, as well as the other different forms of illustration, bringing before you the best kind of ancient and modern work. Then you can study drawing and design, construction, knowledge of materials, workmanship and all other matters relating to your profession, and I would particularly draw your attention to the study of the history of architecture, free-hand drawing, and

perspective, all of which can be studied privately. Then a fair knowledge of surveying and measuring, together with a good idea of arranging for general office work or professional practice can be had by reading, attentively, the best works. Be not discouraged if you should appear slow. You will, in the course of time, find out what to admire. Seek aid from those of experience and superior training, and believe me, there is no fear whatever that, if you should have ability, you will fail to get the opportunity of showing it, and in any case you will not be disappointed. It is most important that you become good draughtsmen, and thus be able to lay clearly as possible before your client the object of the design. For this purpose I would strongly recommend perspective drawing, without a knowledge of which you are at a great loss. It gives a better idea of the object than any other kind of drawing can give. To explain your ideas to the artist's workmen who may be assisting you to carry out your design, it is absolutely necessary that your geometrical drawings be clear and distinct, and full. A little extra time spent in this way will save you a great deal during the progress of the work, and you need have no fear that the work will be otherwise than as you had designed in. It will also prevent the possibility of any difference arising between you and the contractor in the carrying out of the work. If this is done, I believe it will be productive of the greatest good feeling amongst all parties—clients, architects, and contractors; you then shall hear less of "extras."

It should be your anxiety in your general drawings, to represent on paper, as simply and faithfully as possible, the appearance and effect which the work when realized will present. But for myself I have little fear that if you draw well, and have thoroughly studied your design, you will ever fail to represent faithfully your ideas. There is still less fear of this if you remember that architecture creates a building, the exterior of which is merely the clothing of the interior arrangements, and therefore admits of nothing but what is real.

And here I might, perhaps, say I have detained you quite long enough; but I am sure you will agree with me while I express the opinion, that we have a duty to perform to the public in this association, and that is to shew what an architect really is, and the relation that should exist between himself and the public. The architect has been too long an unknown individual, owing to a variety of causes, but I believe to a large extent to the fact that societies, such as yours, have for a long time been altogether neglected. You must endeavour to remove this ignorance, which should not prove very difficult, when you consider that almost every one has had in some portion of his life, more or less, something to do with them. Let there be no more disputes as to the styles; the effort of the artist-architect should be to work diligently in that which he has adopted. Keep by all means the poetry of the art, but do not forget the other matters within your province, which are so necessary.

Remember that drainage, water supply, and ventilation must receive your best attention. In fine, if you would expect that the public will thoroughly understand your mission and appreciate it, you must unite the art, and keep art and science always combined in friendship.

How much our work would be lightened, and how much more pleasant, if our clients had a general knowledge of the requirements to be realized by the architect. The clergyman would then have formed his ideas of the plan, style, and construction of the church he wished carried out, and would be able to instruct you as to his wants, and the kind of decoration and furniture most likely to meet his views; and so with schools and other similar buildings. The gentleman would know his wants as to his dwelling, and the style to be adopted, as well as the material, and there would be little possibility of dissatisfaction at the completion. You would be less likely to hear of amateur architects. Then indeed we might hope to have less of sameness and ugliness, and more of truth and beauty in our public and private buildings.

The poet, speaking of Pugin's contrasts, puts clearly before us the state of things that now too generally exists, when he says:—

"Some raise a front up in the street
Like old Westminster Abbey,
And then they think the Lord to cheat
And build the part back shabby.
For stuccoed bricks, and such like tricks,
At present all the rage is;
They took no one in, those fine old min,
In the pious Middle Ages."

I have read that architecture is the ultimate polish of man, and we should do all in our power to realize this happy state of things. It is not just to the public to expect they would be able to understand, must less to appreciate your views, which of necessity are quite new to them, when they have never, perhaps, had an opportunity of learning even

the simplest details of your profession. Then the endeavour of all should be to have schools of the fine arts established in our midst, and the foundation of a healthy art education laid.

What, then, are the greatest prospects of the profession? You have certainly complainings, and justly. You have also strong proofs of prosperity on every side. The number of architects is increasing every day. You should take courage from the fact, as it is pretty certain that architectural practice is becoming more and more general, in fact, becoming a necessity of the age. I need scarcely dwell on the fact patent to you all, that the influence of the profession is being felt day by day; and though you occasionally hear statements made relative to the profession, you find on examination that these observations are made oftentimes without sufficient ground on the part of the individuals; oftener still without any knowledge of the subject. I think it only reasonable to expect that before men criticize, they should learn even a small portion of the knowledge which an architect should possess. Men of real influence seldom or never indulge in such criticism, but place themselves unreservedly in the hands of their professional advisers.

I would also mention that the influence of the press, as a rule, has been everything that could be desired in supporting the dignity of the profession. I hope it will continue in the same course, never sparing us when our buildings depart from their proper uses and truthful principles. You may then be satisfied that the increased influence of the architect, founded on his improved attainments, proves that the profession of architecture is fairly prosperous, and that no one of ability need fear to succeed in it. I shall not dwell on the fact of how we are to get practice, or how act in our intercourse with our clients, and those who may assist us to carry out our designs. Then having formed some idea of how to represent the work to your client, you should perhaps consider our relations with them, and all others in our path (professionally). The latter Professor Cockerell gave it as a rule—than which I think none could be better—"To be an artist amongst gentlemen, and a gentleman amongst artists."

As to getting practice, almost every man's experience in this way is different from his neighbour's. Competition afforded to many rising young architects a means of distinguishing themselves in early life, although there is a great risk; yet, I think the principle is a noble one, if only properly carried out.

When you have got clients, you must do all in your power to realize their wants, fall in with their views, hold out against them when you feel that the result will not be satisfactory; and in the case of prominent buildings, it probably will be better to retire from the work altogether, than that your names should be associated with that which is opposed to the true spirit of art. It was very delightful to meet with intelligent clients who clearly stated their wants, and rendered all the assistance in their power: and it was still more delightful to fulfil successively the conditions required by such clients. The work of the architect should not be confined merely to the designing and superintending the building itself, but the whole work of decoration and furnishing should be left in his hands, for it is very sad and very discouraging to the architect to find that when he has tended and cared a building to completion, he found that the fittings and decoration were utterly out of keeping with the rest, often in a different style altogether. This should not be so. To remedy this state of things, fine art must be studied by the general public. This study can give the greatest delight. By it you learn to see beauty, where before all was blank. This study produces a spirit of gentleness and refinement, and without it you can hardly realize to the full the beauties of creation. The earlier in life you get this power, the more readily you learn to understand those beauties. You then can sympathize with the efforts of the artist, and a more charitable feeling will arise when you witness defects, as you will be better prepared to understand the difficulties of his position. You should also study art, and support professors in every possible way, for this reason—that they live for their country's good, and it is the only thing that shall remain to give a just idea of our state when all else shall have passed away. Lose, then, no opportunity for the cultivation of this art, and a training to appreciate works of art. Architecture is the history of civilization; it was the first necessity—it is the real and only foundation of fine arts, and should be the guiding spirit to the other, which were created for her decoration.

The late Cardinal Wiseman, speaking of architecture, says:—"It may seem superfluous to observe in writing of architecture, that it obviously divides itself into two branches—the purely artistic, and the constructive or scientific. If, on the one side, it seems to descend towards the class of mechanical

pursuits, on the other it rises so high as to command its other two sisters, and to be almost necessary for their perfect existence. I have sufficiently intimated that one great difference between ancient and modern art, including mediæval art, under the first division, consists in this—that ancient art was public, and modern is private. Galleries of sculpture were anciently unknown. Its most matchless pieces were in temples, or in public halls, such as those baths, or in open gardens, perhaps, adorning fountains, but generally accessible to the most plebeian eye; but this very circumstance shows how architecture is in the highest sense a fine art, and must always necessarily grow as such commensurately with the advancement of the other two branches of art of design."

It is sad to think that in our universities the fine arts receive none of that consideration which is their due, and which they should receive, if the education afforded is to supply the intellectual wants of the age. In England, France, and most other countries of Europe, those arts have always received due attention; but in Ireland we are very far behind. I am happy to see that in one of the universities attention is being paid to fine art and antiquities, and I hope the day is not far distant when our "silent sister" will remove the reproach that practically the fine arts are expunged from her programme.

The Government of the country do very little for art education. It is absolutely necessary that museums should be established and public lectures instituted, if we would hope for a real knowledge of art in our midst.

However, notwithstanding all the drawbacks, I am happy to congratulate you on the exertions you have made in the past, and the success attending those efforts. It must have been a source of great pleasure to you to find your effort so well assisted by many of the senior members of the profession; and the friendly aid given in several ways by the Royal Institute of the Architects of Ireland must also be encouraging; and though last, not least, the friendly interest displayed by your friends who have honoured you here this evening, must be to you a proof that if you work earnestly for the advancement of the fine arts, you need not fear that your efforts will go unrewarded.

VITAL STATISTICS.

We are indebted to a morning journal for the following remarks upon the last quarterly return issued by the Registrar-General:—

The marriages registered in the first quarter of this year numbered 10,540, or 1 in every 127 of the population. The births registered in the second quarter amounted to 39,540, or 1 in every 33 of the population. The deaths in the same period numbered 28,120, or 1 in every 51 of the population. A woman in Lurgan workhouse contrived to gain 127 years, and another old lady in Skull reached 105. Smallpox killed 220 persons in April, May, and June—Munster, as usual, contributing more than half. We noticed in our last article on a previous return that the southern province was, unhappily, prominent in disease and death, and that Tralee was, unhappily, prominent in Munster. Of the 143 persons slain by smallpox in the province, Tralee contributed 94. There was not a single death by the disease in Connaught, and only 15 in Leinster. Fever carried off 958 persons, Munster losing a third of the number. She also lost 13 of the 17 who died of cholera. We may now turn to the Registrars' notes as to the condition of their districts. Banbridge has had a good many cases of typhoid fever, and typhus appeared in one family." The Registrar observes that "as soon as the people clear out their manure heaps in spring, which are generally situated within a few feet of their doors, so soon does typhoid fever makes its appearance. Surely this is plain warning! In Lisburn all the disease is due to the "wretched state of many of the dwellings of the artisan and labouring classes." Lisburn is in "a filthy condition." In Enniskillen an outbreak of typhus is attributed "to overcrowding and filth." In Cavan town, an open sewer through the entire length of a street produces a smell at times "unbearable." In Killesandra (Cavan district) "pigs, asses, and goats, are kept in many dwelling-houses." In Athy, the authorities are said to be "dangerously inactive." In Carlow, fever has been prevalent, and the disease "is no doubt induced by the existing state of the sewerage." In Ballinrobe, "filthy cess-pools are kept close to the doors"—the foci from which scarlatina and fever radiated—"one-third of the deaths have been caused by these preventible diseases." In Loughrea the water is very bad, and fever has followed. In Skull, sanitation

"is most shameful, and grossly neglected." The water is dirty. Tralee, of course, is dirty. Ireland has decreased in population by just 34,000 persons in the quarter ending June 30. About 47,500 men and women left our shores in the three months—an increase compared with the corresponding period of last year of 9,300. The story is a sad one.

HOME AND FOREIGN NOTES.

ROYAL DUBLIN SOCIETY.—The first Evening Scientific Meeting for the session 1873-4, will be held on Monday evening next. Communications: On Clocks for Equatorial Telescopes, by Howard Grubb, C.E. On Eichorn's Ball-peat-Making Machines, by Professor Reynolds.

DRAINAGE OF LOUGH ERNE.—An application has been made to the Board of Public Works requesting that the district bounded and set forth in certain maps accompanying said application, may be incorporated under the style and title of the "Lough Erne Drainage District," and that an inspector may be sent to said district to make enquiries into the propriety of constituting the same.

BUILDING IN LURGAN.—The Chairman of the Lurgan Town Commissioners on his re-election stated, in reviewing the progress of the town, that thirty years ago the population of Lurgan was 4,600; now it was 11,300. Thirty years ago the rateable property in the town was £4,500; now it was upwards of £17,000. The progress in building was something astonishing, one local merchant having within the past year built 50 houses, and contracted for as many more.

TECHNICAL EDUCATION IN BELGIUM.—The Antwerp branch of the "Denier des Ecoles" Society has just opened a technical school for young ladies from the Belgium middle classes. The pupils, who are to contribute a nominal monthly fee of three francs towards their schooling, will not only be enabled to learn in that establishment some profession or trade suited to their capacities and inclinations, but, in addition to this, they will be permitted to follow a course of instruction in four modern languages.

The number of visitors to the Vienna Exhibition from the opening day to the close, was 7,254,687, of whom 2,196,360 entered without payment.

Pike's Peak in Colorado, is 14,216 feet above the sea-level, and it has been selected as the site of a signal and scientific station. The building and the telegraph line are complete, and already occupied for work. The station is to have a complement of one observer and three assistants, who are to remain up aloft all winter. Important scientific facts are expected to be derived from observations made at such an altitude.

THE MONEY LENDING SWINDLE.—An Englishman named Watson has been sentenced to five years' penal servitude, for obtaining money under false pretences, by means of advertisements in the newspapers, headed "money to lend."

PAPER AS A BUILDING MATERIAL.—The use of paper as a substitute for wood in the construction of railway carriages has long been known, and paper wheels have been used successfully in the United States—in which country paper collars, hats, shirts, waistcoats, and other "notions" seem first to have originated—but the use to which this material can be put seems now to be without limit, as there is a paper church actually existing near Bergen, which is capable of containing 1,000 people. It is circular within, and octagonal without. The relievers outside, and the statues inside, the roof, the ceiling, are all of *papier maché*, rendered waterproof by saturation in vitriol, lime water, whey, and white of egg.

THE REGULATION OF PUBLIC CLOCKS IN DUBLIN.—The following public and private establishments have specified their wish to have their clocks placed in connection with the system proposed to be established by the Royal Dublin Society, viz:—Dublin Corporation, Bank of Ireland, Hibernian Bank, National Bank, Royal Bank, Rathmines Commissioners, Dublin and Drogheda Railway Company, Wicklow and Wexford Railway Company, Midland Great Western Railway Company, Glasnevin Cemetery Company, Freemason's Hall, Sackville-street Club, Clerical Club, North Dublin Union Workhouse, Messrs. Pim, Brothers and Co., Arnott and Co., Courtney and Stephens, Andrews and Co., Gaskin, Browne and Nolan, Waterhouse and Co., Topham and White.

DOMESTIC SCAVENGING.—The Committee No. 1 of the Corporation state, by public advertisement,

that they have organised a staff of horses, carts, and men, with appliances, for the purpose of affording facilities to house owners and occupiers who are desirous to have ashes or other refuse removed from their premises within the borough. Applications are to be made at least two days before the removal is required, and a deposit of not less than ten shillings made of the probable amount of cost at the following scale, viz:—For the first two loads six shillings, and two shillings and sixpence for every load beyond the two first. If the number of loads be less than two, six shillings will be nevertheless charged; any amount of the deposit over that sum unexpended will be returned to the depositor. We will be anxious to hear how the Corporation tariff will be found to work, not to speak of the organised relay of men and horses. The house refuse, ashes, and dust, are removed in London gratis; it is only heavy and extraneous rubbish that is charged for.

PETROLEUM FOR RAILWAY LOCOMOTIVES.—Talking of steam power, the directors of the Underground Railway have given permission to have the experiment tried of using petroleum instead of coal. In order to do this one of their locomotives is undergoing alterations, and it is hoped before many weeks are over that the new scheme will be in perfect working order. It is calculated that ten shillings' worth of petroleum will do the work of at least one ton of coal, which at present and possible prices of fuel is a consideration. Another advantage which is hoped will be derived from the substitution of oil for coal in the locomotives will be that the sulphur vapour, which at present is the drawback to underground travelling, will disappear with the coal from which it comes. Happily, America promises petroleum in unlimited quantities.

PARIS NATIONAL SCHOOL OF DRAWING AND MATHEMATICS.—The new establishment, which is intended for the instruction of all those whose occupations include the application of the fine arts to industry, is situated in the school quarter—No. 5, Rue de l'Ecole de Médecine—and has just issued its programme for the current session. It is divided into day and evening schools, and the whole are gratuitous; the morning classes meet twice, and the evening classes, once, a day, and the duration of each is generally from two to three hours. In the morning classes the work includes drawing from the living models, or from the antique, and from the round, the study of the figure, of animals, flowers and ornament, every day; professional studies of furniture, vases, bronzes, tapestry, paper hangings, decorative panels, &c., copies and compositions, arithmetic, algebra, fractions, logarithms, equations of the first and second degree, rectilinear geometry and trigonometry twice a week; geometrie drawing twice a week; perspective and its applications twice a week; sculpture, including the figure, living animals and plants, composition of ornaments, and lastly, engraving on wood during eight hours each day. In the evening schools the course of study is nearly the same, but the professional studies mentioned above are replaced by the history and composition of ornament, illustrated practically by a professor; and there is a special class for architecture and construction, including descriptive geometry, shadows, perspective, stone cutting, statics, strength and stress of material, and, lastly, architectural composition and perspective as applied to sculpture. Such is one of the means by which our neighbours, in the midst of all their difficulties, are doing all in their power to instil into the minds of the working classes, and of youth, the principles of art and science and the elements of taste; the lesson is an important one to all who have a due feeling of the value of art.—*Jour. Soc. Arts.*

BOOKS RECEIVED.

Lessons from the Lives of Irish Surgeons. By E. D. Mapother, M.D., Professor of Physiology, and Member of Council, Royal College of Surgeons, etc. Dublin: John Falconer.

The Prevention of Artizans' Diseases. By the same Author. Dublin: Alex. Thom.

THE first-named is a report in pamphlet form of the excellent address introductory to the session of the Royal College of Surgeons, delivered last month by Dr. Mapother, and briefly alluded to in our last issue. We are well pleased to see it reprinted, and we hope, when the author has time, he will follow up the subject so ably outlined. These short notices of our native surgeons furnish noble

examples of untiring energy, active benevolence, and remarkable skill, not only recently in the history of the profession, but at a period when the practice of surgery laboured under extraordinary difficulties, and possessed neither institute nor organ to represent it. As the pamphlet is easily procurable, and ought to be in the hands of hundreds of general readers, as well as every member of the medical profession, we will forbear giving extracts at present. We would be glad indeed to see these short notices swelling before long into a volume on the "Lives of Irish Surgeons." The basis is laid, and we believe if Dr. Mapother sets himself to the task he will find no lack of materials. We have no doubt as to his capacity in producing not only a readable, but a valuable, volume upon the subject, which might be prefaced with an introduction on the rise and progress of medical science in Ireland.

The second pamphlet embraces the eighth lecture of the series on Sanitary Science and Public Health, delivered recently at the Dublin Society. The circulation of the lecture in pamphlet form ought to result in a benefit to the individual and public health. A number of the diseases affecting artisans in the prosecution of their trades, and which they are liable to for want of devoting particular care to their health, are here described, and preventatives given, which we are sure if properly adopted would tend to reduce the diseases to a minimum, if not eradicate them entirely. Employers of labour, however, as well as the artisans themselves, are much to blame for the unwholesome and ill-ventilated workshops and rooms they provide for both male and female workers.

We will return on an early occasion to the subject, and the trades treated on in this pamphlet, and supplement them with particulars of other trades and diseases not entered upon. The concluding paragraph of the pamphlet is worthy of reproduction, and the advice given cannot be too often repeated. Over and over again we have written the same thing; if not in the same words, at least in substance:—

"Baths, free or very cheap, are sadly needed in several parts of the more crowded parts of the city. Ablution is much neglected by artisans, and one sees them in galleries of theatres as sooty and grimy as when they left work. Excursions and walks on the Sunday afternoons do much to preserve the artisan's health, and proximity to the sea and mountain makes Dublin of all cities that in which they can be more readily enjoyed, especially as we have now the tramways. Too many of the labouring class spend the greater part of the Sabbath and the Monday idly in bed or in drinking. Employers should punish all those who absent themselves on Monday [without good cause]. Social economies—such as savings banks and Government assurances and annuities, which are so much safer than "Friendly Societies," do much for the mental quiet, and, therefore, bodily health of the working classes. The opening up of our squares would prove a great blessing to the children of the working classes. Again, there are many spaces now disused, or covered with ruins, which if levelled and planted with a few trees and grass, would make capital recreation grounds. For example, the spaces between Patrick's Close and Bull-alley, between Great Elbow-lane and Gill-square, between the rear of the Adelaide Hospital and Golden-lane, and on the north side of Newgate. The demolition of many tenements utterly beyond repair, and the substitution of decent dwellings for the industrial classes in city or in suburbs, connected with it by cheap tramways, are among the most pressing wants of the day. Our taxation, which for water supply and main drainage has provided, or must provide, three quarters of a million for the twelve years (1864-75), can scarcely bear unusual expenditure for some years to come. Our city is, however, conspicuous for the generosity of its prince merchants; and benevolence could scarcely find more worthy objects than those I have hastily indicated."

Certainly not; but individual acts of benevolence will not go a great way. If benevolence, became contagious, and all of those who could afford to do good were to do it, our city would show evident signs of improvement.

The first duty, however, rests with the cor-

porate authorities; and when it is neglected, other parties have an excuse for doing nothing. We are well aware that the Corporation of Dublin cannot do at once all that is needed; but there would have been ample funds to attend to the sanitary wants of this city, if they were not systematically squandered for years in litigation and other matters which we need not more specially allude to at present, as we have often before noticed them.

ENIGMA.*

Mantled in everlasting snow,
On Andes' topmost stone I'm seen;
All but ubiquitous, I hope to shew,
Or nearly everywhere, I mean.

In the midst of the gold-tinted cloud I am there,
When at evetide the sun is declining;
And I'm seen in the moon, looking so fair,
Through trackless space when shining.

On the verge of the ocean, where its wave's gently
I'm there, and seen in its foam; [gliding,
While I'm heard in the storm, its waters dividing,
And tost in its billows which ceaselessly roam.

I'm seen in each drop of the rivulet's source;
I'm first as 'tis onward, I'm in the midst of its flow,
As it noiselessly winds through its sinuous course,
Till I'm heard in the fall of its torrent below.

I'm first in the onslaught which war ever brings;
Loudly I'm heard in its cannonade roar,
And I'm last in the echo, as, wailing, it rings
Through mountain and moor, over and o'er.

And now I think I'll change the scene,
Though kings and queens my aid disown,
In pomp and power I am, in place have never been,
Therefore in palaces I'm totally unknown.

But then how oft I'm with the poor—
'Tis plain as one and one make two;
You'll think me charitable, I'm sure,
And yet I won't agree with you.

I ne'er was absent yet from home,
Still—'tis very strange, but true—
Look for me, I'm sure to roam,
Because I'm always found with you.

'Tis said I'm like eternity,
Tho' I'm the work of man;
'Twere difficult to find how that may be,
And yet I think you can.

What I'm most like, 'tis not so hard to tell:
'Tis nothing—this you'll easily find;
Yet something else which a marriage bell
Will doubly call to mind.

Perhaps it may that merry chimes
Make you remember ring;
I'm very like one at all times—
Oh not of bells, for here myself I bring.

ART AND ARTISTS.

A NUMBER of sketches in oil and finished pictures are now on view at the French Gallery, Pall Mall, London, painted by Edouard Frère. Amongst them are—an "Interior at Moret," "Rag-pickers' Sunday," "Fisher Girl at Boulogne," "A Boat at St. Valery," "Antoni," "Fetching Water," "Two Brittany Girls," "Views at St. Chely, Auvergne," "A Court-Yard at Piscop," "A Watercourse at Antwerp," &c. These paintings have attracted much attention, and are highly spoken of on the part of all visitors.

In McLean's Picture Gallery, opened a few days since, there is a good display of water-colour drawings. Amongst the most noticeable drawings are—"After a Bal-Masque," by Parditta; "In the Boudoir," by Jimenes; "Old Houses in Rouen, and "Les Blanchisseurs," by Saurier; "A Twilight on the Ice," by Sabeno; "The Procession" and the "Mazarin Library," by Fortuny; "Lock Etive in Argyleshire," by Birket Foster; "View in Kent," by Mr. Whimper; "Crossing the Desert," by Mr. Washington; "Dutch Interior," by Blommers; and "Soldiers Gambling," by Simon-etti.

* Written for the IRISH BUILDER.

The collection contains 159 drawings, some of a minor character, but others, like those we have cited, by well-known names. Lundgren has "An Eastern Lady," and Leitch a "View on the Clyde;" Sir John Gilbert, a composition of "Henry VIII. and the Nurse;" Carl Haag, "A Tambourine Player;" Guido Bach, "Italian Peasants;" Skill, a "Shore Scene, Brittany;" Whittaker, a view "At Capel Curig;" Rowbotham, a view "Near Naples;" Edmund Warren, a scene "Near Arundel;" J. L. Brown has two clever, small sketches, one of a military character, "Visiting the Outposts," the other is called "The Recentre," depicting a meeting of cavaliers in a forest; Vacher, a drawing of "The Numidean City of Lambeca;" Pritchett, "Scheveningen Village;" Whimper "Blackdown Wood, Surrey;" Edwin Hayes, "A morning off Scarborough;" Topham, "A Flower Girl." There are other pictures on view by the same artists, as well as some ones by artists whose names we have not mentioned.

In respect to the French artist, Edouard Frère, whose pictures we first alluded to, we find in the London *Standard* the following notice:—

"On the 10th of January, 1819, Edouard Frère was born in Paris, and in 1836 he became the pupil of Delaroche. So much for the information to be found in the 'Supplement' to Brian's Dictionary of Painters." The English connoisseur is chiefly indebted to the founders of the French Gallery in Pall Mall for his acquaintance with the works of this, the most gentle of all the French painters. Leaving the somewhat high-flown school whence he derived the rudiments of his art-education, Frère would appear to have commenced his pastoral life. With a pencil sensitive as a minstrel's voice, he for the future proclaimed only the virtues of the lowly and more virtuous among the peasantry of France. Henceforth the poor, and the children of the poor began to excite the wonder of the great. The charm with which Frère invested the brick-paved mud cabins of France was quite new. There was no trace of vulgarity in anything that came from his hands. His peasants touched not their most simple meals without solemn ceremony; they sought not their slumbers without prayer. Order and neatness and a thousand graces enrich Frère's painted chronicles of the poor. And why? He always, or nearly always, places childhood and sunshine in the foreground, and if age and its gravity comes as a foil to infancy, as sometimes in the cottages of Auvergne, the contrast is always welcome, and many indeed are the arts by which this painter, ever treating, as it were, the same theme, contrived never to weary those who gathered around his pictures. His poor are never mendicants; his little girls, who are commonly found in charge of baby, as we have elsewhere said, are not to be matched under the sun. In a word, Frère painted, and the most trivial of incidents became attractive, endowed with new life and light."

TO CORRESPONDENTS.

OGGIA.—The translation of Roderick O'Flaherty's work, written originally in Latin, was often attempted in the last century, but, with one exception, never completed. A translation was published in Dublin by W. M'Kenzie, of College-green, in 1798, in two small volumes. The translation was the work of the Rev. James Hely, A.B., of Trinity College. O'Flaherty was the author of another work, entitled "Oggia Christiana," supposed to be lost. O'Flaherty was born in 1630, and died in 1718.

DUFFY'S LIBRARY OF IRELAND.—Several volumes were projected, which were never begun by the writers announced. Dr. (now Sir John) Gray was announced, if we remember aright, for a volume on "Irish Parliaments," but it has never appeared.

"UNKNOWN DUBLIN."—Notices of streets untouched, and needing to be re-touched, may be expected.

ANOTHER CENTRAL STATION SCHEME.—We have been looking into the proposals of this new project, which is likely to meet the fate of those of the same kind which preceded it. Neither the projectors nor the engineer can congratulate themselves on their success. It would seem that it is the interests of individuals that have been studied in all these Central Railway projects, rather than the interests of the public in general. We will examine more thoroughly the ins and outs of the new scheme, and we will have something further to say.

A STATUE OF SWIFT.—We would be glad indeed to hear of a project set on foot to erect a statue to Swift in his native land. There are modern patriots who have been monumented at the public expense, who did not deserve one-tenth of the honour accorded to them, and who, in comparison with Swift, were but as pigmies in intellect and public service.

STAND-FAST DIK.—This is the name by which the rock was formerly known which passes under the bed of the Liffey at Essex Bridge in an oblique direction.

Press of matter obliges us to hold over some papers, and to cancel others.

The Irish Builder.

VOL. XIV.—No. 335.

Builders' Architecture.



It is generally known—at least to those who have any connection with building operations—that not a third of the houses erected in this city, or indeed elsewhere, are from the designs of *bona fide* architects. Streets after streets of domestic dwellings are put up, that are in their internal arrangements but a copy of each other, with a little modification here and there in the detail. Externally, also, very many of the houses are but mere copies of previous buildings, with the addition of displays of banded bricks exhibiting various patterns, and mouldings and cornices of compo. A large portion of our street and suburban villa buildings is emphatically what we may call builders' architecture. We do not

wish it to be inferred—though a number of designs originate from builders' offices and workshops—that all the houses are naturally bad, that emanate from that source. There are builders, and builders that must be distinguished from one another. It is a fact that we have no wish to deny, that many of the fine old domestic dwellings of this city, built in the last and early in the present century, were exclusively the work of builders, in design and execution. And even at present there are very respectable buildings indeed, which professional architects have no hands in designing.

The ordinary class of dwelling is very commonplace in plan and design—at least it appears so to the ordinary builder,—so he dispenses with the use of the architect, and believes he saves his money. We do not agree in that opinion, however. A competent architect needs to think of more than simple designing when called upon to furnish a set of drawings—site, foundations, drainage, water-supply, ventilation, and some other essential matters, claim his study. Your ordinary builder thinks mostly on a series of other matters when he has a rough draft of the intended building before him, and begins to apply his compass and rule. How many hundred of bricks will it take? What quantity of timber, lime, and sand? How many men will be sufficient? And how many weeks ought it take? These are the chief matters that occupy our builder's thought. When the carcass is up, it is quite sufficient time for him to think about the "finishing touches" that become necessary to entice tenants or purchasers, if the house is a speculative one. Work that should be performed first is often performed last in many of our second and third-class builders' houses. It

is performed at a time when it becomes impossible to perform it properly, and the usual result is the entailment upon the future tenant of a serious expenditure of money, probably in the first year of his occupation.

We know many well-built builders' houses which are all that could be desired in the way of comfort and accommodation, though their style of architecture is most faulty, and in some instances positively absurd. How will the present system be improved upon, and will builders' architecture develop in its future practice a better style? These are questions which cannot be easily answered. There are many of our minor and unknown architects who supply our builders' designs, and who are content to do hack work, like the Grub-street authors of old; so, while one portion of the architectural profession are declaiming with all their might against builders' houses, another—and not a small contingent—are helping to perpetuate the system condemned by their brethren. Early in the present century it was not usual to see such announcements as Messrs. So-and-So, "Architects and Builders," or "Engineers, Architects, and Surveyors," or "Architects and Surveyors." Instances are known where "Bricklayer and Architect," and "Carpenter, Mason, and Architect," were paraded. Even now we find the system is not exploded, as we meet such announcements as Messrs. Blank and Brothers, "House Agents, Valuers, Auctioneers, and Architects." Some of these personages added the useful calling of Undertaker to their other callings; and why not? What could be more in consonance with the prevailing taste of the times or the spirit of the age for at least one class of building speculators than to put up such a truthful sign as "Architects and Undertakers"? Is it not a fact that the consequence of these building operations is the confirmation of the legality of their titles? Houses that are built to sell are generally houses that are built to kill, and the combination of the two professions utilises clients in the most profitable manner, living and dead.

No respectable member of the building or architectural profession will, we opine, find fault with our remarks, for they are only intended for those whom the cap fits. It will be a long time, we fear, before builders' architecture will cease to exist, and that builders will strictly confine their operations to building, and not designing, or rather, not copying. Architects are to blame for much of the present pernicious system; and so long as there is no proper *esprit de corps* or solidity existing, to bind members of the profession together, the pursuit of architecture will for the many be a disheartening one. Builders are found amongst us in numbers who despise architects, and they have not a much better feeling for their workmen, though many of them were once workmen themselves. On the other hand, we have architects who reciprocate the compliment, both with builders and their workmen.

Now, it is the plain and obvious duty of architects to show a sympathy with the workmen, and not look upon them, as many of them do, with a cold and reserved manner. On workmen as much as their employers depend the proper execution of the work; and where the workman has no love for his work it will be found very often, indeed, his want of love has its cause in the lack of a common human feeling between his employer

and himself. Architecture must be lifeless under such a system: there can be no expression in it where the workman's hands act in the manner of mere machines. Strong and commonplace work is useful, but true handicraft embraces science and art; but art is impossible, except of a debased kind, without love for one's work.

Mere builders' architecture is the result of operations; it is a series of contrivances and expedients; it is speculative and imitative; it is barren, and, in a word, a conglomeration of brick, mortar, and cement, utilised in the readiest and cheapest way for the putting together of a building, irrespective of the principle of the harmonious and proportional in architecture.

We look forward with some hope to the progress of education and the advancement of technical and art knowledge by the instrumentality of our improved elementary and art schools and institutes to work an improvement in the direction indicated. The next generation or two will exhibit a great change, and we believe also reform, in the profession, calling, and practice of the architect, builder, and operative.

A CURIOUS PUBLIC COMPETITION AND COINCIDENCES,

In the City of Nilbud once, as ancient chroniclers inform us, there was a sort of local board, the majority of whose members were related by family ties and friendly services. The system of nepotism was carried to such an extent that nearly all the members of the working and talking staff exhibited not only in their actions but in their features a family likeness. People began to think at last that the original progenitor must have some Jewish blood in his veins, as all the descendants had eyes, noses, hair, mouths, teeth, and particularly tongues, like unto one and other. Each member of this ancient local board staff held half a dozen of appointments, some inside the board and others outside of it, though the municipal laws of Nilbud forbid the pursuit of any occupation except that connected with the board, to which each member of the paid staff were to give their whole time and service. A Mr. Factotum, a member of the working staff, who got his appointment by a "fluke," drove a coach-and-six through the bye-laws, from the fact of all the members of the long-tail family assisting him. A vacancy being open on one occasion in the "Muffled Glass and Patent Transparent Consumers' Society," Mr. Factotum was put in by a gentle squeeze without even putting up. True to his name, he undertook to fulfil the duties of Secretary, Manager, and General Glass Blower and Embosser. The ancient local board accepted Mr. Factotum's resignation with seeming regret, and his place was declared vacant to enable Factotum to contest it in his own right. A hiatus occurred in the ancient chronicle at a most interesting part, but as far as we can make out the competition stood thus—Factotum No. 1, "Secretary and Manager;" Factotum No. 2, "Stoker and Engineer;" Factotum No. 3, "Registrar and Glass Blower."

This is the earliest instance on record of the system of nepotism in public boards, and the City of Nilbud was the first to prove that one "handy man" could undertake many offices, and receive several salaries, affording to pay deputies for doing his work at the public expense.

THE ROYAL IRISH ACADEMY.

A STATED general meeting of the Academy was held on Saturday Evening, at the Academy House, Dawson-street,

Professor JELLETT in the Chair.

After the minutes of last meeting were read and signed, the Chairman called on Samuel Ferguson, Esq., LL.D., to read his paper "On the Completion of the Biliteral Key to the Values of the Letters in the South British Ogham Alphabet," of which we print a summary:—

The Ogham inscriptions of South Britain (understanding, at present, Wales and Devonshire, are distinguished from those of Scotland and Ireland by being almost always accompanied by corresponding legends in the Roman character, and so, like the Rosetta Stone, carrying their keys within themselves. Prior to 1870, the values of almost all the letters of the South British Ogham alphabet had been ascertained in this manner. There remained only P, F, L, D, which were problematical, and B, which had not been found at all, to be identified. In December, 1870, it was pointed out to the Academy that the equivalent of P was found in a certain combination of Ogham digits on the monument to *Turpill* at Crickhowel. P and L might be inferred from *fil*, the Oghamic equivalent of *chili* on the Tral-long legend, as also F and D, from their use in the name *Dof(a)ceos* on the Tycoed monument of which a cast was exhibited, made in 1872, disclosing hitherto unobserved portions both of the Oghamic and of the correlative Latin inscription. The identification of B alone was required to complete the independent key to this class of Ogham characters. This was accomplished by the discovery, in August of the present year, of an Ogham inscription on the angle of the well-known *Dobunni* monument from Buckland Monachorum now preserved at Tavistock, in Devonshire, and of which a cast was exhibited. The leading characters of the name *Enabarri* of the Latin text (*DOBUNNI FABRI FILII ENABARRI*) are still legible in the Ogham *naharr*; and the Oghamic representative of B is so ascertained without resorting to any external proof. External corroboration is, however, found abundantly in the substantial agreements of the results with those derived from the Irish lapidary Ogham texts, many of which "echo" formulas found in Latin inscriptions, and in one Ogham legend, in South Britain. The manuscript keys to the Ogham alphabet preserved in the Irish books differ in one material respect from the South British and from the generality of Irish lapidary texts, but agree with the Scottish examples; and the South British texts being older than the manuscripts, an inference arises that the Scottish Oghams are more recent than the others. Several photographs from casts of Ogham inscriptions were exhibited in illustration of this paper.

The second paper was by Professor Jellett, "On the Question of Chemical Equilibrium," during the reading of which the chair was filled by Samuel Ferguson, Esq., LL.D., V.P.

Both papers elicited remarks from several members, amongst whom were Dr. Apjohn and Mr. Hennessy. They were referred to Council for publication.

Professor Ingram (Hon. Sec.) read a list of works presented to the Library, and also the following donations to the Museum:—A bronze celt or missive found in 1845 on the island near Lough-na-Glack, in the barony of Farney; presented by Evelyn P. Shirley, Esq., M.R.I.A. A plaster cast of stone celt found at Newton, near Warrington; presented on behalf of the Museum Committee of the Corporation of Warrington, through their secretary. Copper hatchets and palstave, and silver ornaments found with a large number of similar objects at Gungera, 40 miles north of Boonah, in the central provinces of British India; presented by Lieut.-Col. R. W. Keatinge, Bengal Staff Corps. A pair of new shark-skin shoes, from Bala-cherry, in the Gulf of Cutch.

A vote of thanks having been passed to the several donors, the Academy adjourned till the 8th inst.

A WARNING TO BUILDERS AND THE BUILDING TRADE.

THE following case was recently heard by the Recorder of Belfast. Mr. Henry M'Connell, a building surveyor, 3 Donegall-street, Belfast, sued Messrs. Bennett and M'Cullough, builders, Lisburn, for £26 8s. 5d., alleged to be due to him for work and labour in supplying quantities for a manse at Dromore. The following is a summary taken from the report in the *Belfast News-Letter*:—

The plaintiff was examined by Mr. Alexander O'Rourke—Is a building surveyor and measurer. Mr. Gray, Belfast, was the architect for a manse to be built at Dromore. There was a plan given for that house. The defendants are builders in Lisburn. Produce a document signed by them asking me to take out quantities for that building. Took out the quantities of that plan, and the plan was abandoned on the ground of its being too expensive. There were two alternative plans furnished subsequently. Received an order to take out the quantities in the two alternative plans. Defendants tendered for the work, and got the contract to carry it out. Don't charge for taking out the first quantities, as the plan was abandoned. For taking out the other two quantities I charge 1½ per cent. each on the contract. The amount of the contract is £764, and my percentage on that would be £22 18s. 5d. There are some extra charges to the amount of £3 10s., bringing the entire up to £26 8s. 5d.

Cross-examined by Mr. Seeds—Were you not to supply the quantities before the tender was put in?—Yes. And don't you know the tender was put in before the 8th July?—I believe it was so arranged originally. But, no matter, don't you know?—I do not. Don't you know as well as you know you are standing there that the defendants' tender was put in before the 8th July for the amended plan?—I do not. Will you swear it was not, and that you did not know it at the time?—Witness, reading from a document, "Tenders to be sent in not later than the 16th instant."

Mr. O'Rourke—They kept the quantities for a week, and then returned them.

Cross-examination continued—On your oath, was it on the 11th July you sent in the quantities?—Yes. And they never opened them?—I don't know. Don't you know their tender was put in before that?—I never heard it was. Tell me when you commenced to charge 3 per cent.—I only charge 1½ per cent. on each. I wanted the builders to put my fees into the contract. Supposing you put in twenty plans, would you expect them to put them all in?—I only put in two quantities. Supposing there were twenty different plans for building the house, and you made twenty separate quantities, and a man succeeded in getting the contract, would you charge for the twenty quantities?—No. And why charge for two?—Because it was a most improbable thing there would be twenty. You know there was only the one building?—Yes. Were you anxious that Wallace and Henderson should get the building?—I was not. Did you recommend them?—No; I did not express any anxiety for one party more than the other.

Mr. Wallace examined, said—I am in partnership with Mr. Henderson, builder, in Belfast, and put in a tender for the manse at Dromore. It was on Mr. M'Connell's quantities I put in the tender. I included 3 per cent. for making out the quantities. It is customary to put in 1½ per cent. in each building, and in this case two plans were furnished for the building, and 3 per cent. was charged, being 1½ on each. I did not get the contract.

Evidence was then given for the other side.

Mr. Bennett deposed—I recollect the amended plan which I contracted for. I put in my estimate on the 9th July. I derived no benefit, advantage, or assistance from the quantities of the plaintiff. It was the 1st of July I signed my name to this document. Not having received the quantities in proper time, my partner and I were obliged to go and make them out ourselves.

His worship said that in this case he had a building to be executed, an architect employed, and a necessary person, a surveyor, employed to make out quantities. This surveyor was applied to by those likely to put in tenders for the work, and was directed by Messrs. M'Cullough and Bennett, of Lisburn, to supply them with quantities for the proposed manse and offices. There was no specified time within which the quantities were to be sent forward. He was to do a certain work, and he did it, and it was not said he delayed it too long. He got the order on the 9th May, and furnished them on the 11th July. The defendants put in their tender before they got the quantities. That might be a clever device in order to get rid of this claim. Although the quantities were not opened it was no matter; the defendants had the advantage of the plaintiff's brains. His worship gave a decree for the full amount.

Here we have an ordinary case of an architect employed to prepare plans for a Manse or minister's residence in connection with a place of worship at Dromore. When the drawings and specifications are ready for tender, a surveyor steps in between the architect and his client, without being employed by either; and communicates with a number of builders, sending them a form for signature, requesting him to supply them with a copy of the quantities when he measured the plans. In that document the surveyor did not bind himself to supply the quantities at any particular date; indeed, he was not bound to supply them at all. The architect and his client were anxious to get the tenders early, and, with others, informed Messrs. M'Cullough and Bennett, who, fearing some mistake about and sent in their tender on the 9th July. The surveyor's quantities, prepared their own. Two days afterwards the surveyor sent them a copy of his quantities; but, as they were now of no use to the defendants, the latter, without opening the parcel, re-directed it back to the surveyor a few days after its receipt.

When all the tenders were opened, Messrs. M'Cullough and Bennett's, being the lowest, was accepted, and they proceeded to erect the building soon after. The surveyor furnished them with his account for measuring the work, amounting to £26 8s. 5d., on a tender of £764!! Of course the claim was resisted, and the builders were brought before the Recorder sitting in Belfast, who, after hearing the case, gave a decree for the full amount!!! There must certainly have been some mistake in the manner in which the facts of this case were brought into court, or no such verdict could have been pronounced.

The slip ordering the quantities, signed by the defendants at the request of the surveyor, no doubt rendered them liable for the surveyor's fee of 1½ per cent. on the tender, as they not countermand the order when they resolved to measure the work themselves. The fee would amount to about eleven guineas, and that sum should be ample compensation for the services rendered; but the surveyor justifies his claim for £26 8s. 5d. on the ground that there were two plans for the intended building, and that he had to make a separate measurement for each. But although there were two plans they were the same design, and had the same specification, and separate quantities of each were not required, because being the same design, differing only slightly in dimensions, a simple sum of the rule of three would give the difference of value when the value of one was ascertained. But suppose a separate set of quantities was required for each plan, no builder is ever asked to pay for the quantities of a building for which his tender was not accepted: why, then, should Messrs. M'Cullough and Bennett be called on to pay for two sets of quantities when they submitted but one tender, and are engaged to erect only one building.

Now the surveyor on a former occasion took out the quantities of a design for this very manse: no tender was accepted. The design was abandoned and the surveyor could not claim his fee. The surveyor says in his evidence, "I don't charge for taking out the first quantities, as the plan was abandoned." Why, then, could he recover his fee for one of the plans now abandoned? particularly when the defendant did not tender for it at all. And if the plaintiff does not charge for the first quantities, why did he insert at the foot of the bill of quantities in dispute the following item—"Add surveyor's fees at £3 per cent. for measuring three different designs"? And, having deliberately put that in the bill of quantities, upon what ground can he charge Messrs. M'Cullough and Bennett for one design the very same sum he admits in his bill of quantities is sufficient to remunerate him for three different designs?

Of course builders are not so much affected by this as the public who employ them, because every builder who tenders on surveyors' quantities adds the fees to his tender, and its amount must come out of the pocket of the builder's employer, who has no voice in the matter.

NOTES ON THE ANCIENT ECCLESIASTICAL ARCHITECTURE OF IRELAND.

BY RICHARD R. BRASH, ARCHITECT, M.R.I.A.,
F.S.A., SCOT.

IRISH MASONRY.

THE subject of Irish Masonry is one of exceeding interest to the architectural antiquary, and upon which much ignorance prevails. I have frequently been asked the question, even by persons who ought to know better, "Had the Irish race any knowledge of masonry before the arrival of the Anglo-Normans?" and have often been amused at the look of incredulity and surprise with which my affirmative answer has been met. That the Gaedhelic race were at a very early age remarkable builders in stone, I have already set forth in my first chapter, and at a period long antecedent to the advent of either Norman or Saxon into the British Isles. The prehistoric tribes who peopled Ireland before the Christian era, were remarkable for their megalithic erections. The south, west, and north-west of our island, even to the present day, exhibits to us an immense number of Pillar-stones, Cromlechs, Giants'-graves, Cashels or stone-built Forts, and Clochans or stone-built Houses or Huts. Some of the pillar-stones are of great size, and shew that the people who erected them must have possessed a certain amount of mechanical skill, as brute force, alone, could not have elevated them, inasmuch as it could not be applied without the intervention of some ingenious apparatus; thus at Temple Brian, County Cork, stands a fine tapering monolith, 13 ft. above ground; at Knockane, same county, is a huge slab, 13 ft. high and 6 ft. wide. I measured a prostrate one, on the townland of Roovesmore, same county; it was 16 ft. 6 in. in length, and 4 ft. by 8 ft. at the base; near it stands another, 10 ft. 6 in. above ground. On the townland of Barachaurin, County Cork, is a remarkable group of five pillar-stones, one of which is 13 ft. high, 6 ft. wide, and 2 ft. thick; at Barnathoumple, near Inchageelagh, in the same county, stands an enormous slab, 19 ft. above ground. At Ballycrovane, near Castletown-Berehaven, in the same county, stands an Ogham-inscribed pillar, 17 ft. 6 in. above ground, 8 ft. being below ground, as was ascertained by excavation; the entire length of this remarkable monument is therefore 25 ft. 6 in.

Equally remarkable for the skill and power requisite in their construction, are the Cromlechs, or as they are variously named, Druids'-altars, Giants'-graves, &c. Much controversy has been excited upon the appropriation of this class of monuments, both sides going to extremes. The antiquaries of the last century and the commencement of the present, both British and Continental, have contended, that they were altars, used by the druidic or pagan priesthoods for the purposes of animal sacrifice; the theory was not a very unreasonable one, as they had the authority of scripture for the custom of constructing such, of rude stones, untouched by a tool. In the present century we have had another school, who contend that these erections are all sepulchral chambers, basing their theory upon the fact, that in many of them, human remains under various modes of interment have been found. Both schools have, in my opinion, erred in the controversy, and the truth probably lies between them, namely, that these monuments were used for both purposes, and that there has not been a proper classification, so as to distinguish the altar from the sepulchre; I have seen many that never could have been intended for tombs, and many that could not have been used for altars.

The distinction between the Cistvaen and the Cromlech has not been clearly and definitely established; the former are areas enclosed by four or more stones or flags placed on edge closely together, and covered by one or more slabs; some of these areas are squares of not more than 3 ft., others

are rectangular chambers from 6 to 80 ft. and more in length; these, when found in their original state, shew some care in their construction, the interstices between the side and end flags being filled up with smaller stones, as if for the more effectual preservation of the contents of the Cists. It is supposed that most of this class have been covered by earth-mounds, and it is very probable that such was the case, as we find in many tumuli internal chambers constructed exactly like these Cists. A remarkable feature which distinguishes the latter from the Cromlech is its proportions, the internal area of the Cistvaen seldom exceeding 4 ft. wide, and 4 ft. high, while the covering stones are of moderate size.

On the other hand, the Cromlech proper is a large slab of stone of various forms and sizes, elevated upon two or more pillars, the number seldom exceeding five, but more generally three or four; these supporters are usually irregularly placed, no symmetrical area being enclosed, neither any attempt at making a perfect enclosure, by filling up the wants or vacancies between the uprights. Another remarkable feature is the great height at which the covering or altar slab, as it has been termed, is in many instances raised, in some cases exceeding 20 ft. from the ground; thus, the celebrated example named Kits' Coty House, is at such an elevation as that a man on horseback can shelter under it.

On the hill of Owney, County Kilkenny, is a Cromlech, the covering stone of which is 9 ft. by 7 ft. 6 in. by 2 ft.; at Ballyhenniberry, in the same county, the covering stone is 16 ft. 4 in. by 10 ft. 4 in. by 3 ft.—(*Statistical Survey*, p. 624.) That at Kilbarry, County Waterford, is 21 ft. long by 18 ft. wide, and from 18 in. to 8 ft. thick.—(*Ryland's Waterford*, p. 231.) That at Howth, County Dublin, is 17 ft. long, 11 ft. wide, and 6 ft. thick. That at Brennanstown, 15 ft. by 14 ft., and from 3 ft. to 5 ft. thick. That at Mount Venus, 20 ft. by 10 ft. 8 in. by from 4 ft. to 4½ ft. thick. That at Kiltiernan, 22 ft. by 12 ft. 6 in., and 6 ft. thick.—(*Trans. Kil. Arch. Assoc.*, v. 1852-3, pp. 41, 42.) This latter stone, at 14 ft. cube to the ton, would weigh 117 tons; it is poised at a height of 14 ft. from the ground. There can be no question that such masses of rock could not have been placed in position without some ingenious mechanical contrivance, aided by immense manual force.

The underground chambers of the Rath are probably the earliest examples we have of constructive masonry. There can be no doubt as to the great antiquity of those camps, forts, or habitations of the ancient inhabitants of Ireland. They are mentioned in our earliest annals, and their construction attributed to our earliest colonists.

THE RATH.

The term Rath embraces a class of works peculiar to the Gaedhelic race; they are usually circular areas varying from 20 ft. to 300 ft. or more in diameter, and enclosed by one, two, three, or more concentric ramparts of earth, or earth and stones, and having an equal number of fosses. Though generally circular, in a few instances they are square or rectangular, and sometimes of irregular oval forms where the peculiarities of the site required it. Where original entrances exist they frequently face the south, and are built of uncemented masonry and lintelled with large slabs of stone; they are generally of small dimensions, seldom exceeding 5 ft. in width and 7 ft. in height, and, in all cases that I have seen, exhibit sloping jambs, as in the doorways of our Round Towers and Primitive Churches.

The Rath is found all over our island, and in every possible situation—on the plains, in the valleys and glens, on the hill-slopes and hill-tops, and on the stormy headlands of the south and west are to be seen those camps and fortresses of our prehistoric ancestors; groups of them are very frequently found within limited areas; thus on one townland in the parish of Aghabullog, County Cork,

we find six, and the number of three and four can be counted on the Ordnance maps within an area of half a mile square.

In some parts of the country where stone is plentiful and easily raised, the ramparts are often constructed of uncemented masonry throughout, and in some instances with a facing of masonry and a backing of earth and stones. Some examples exhibit a facing of large stones well bonded and fitted; others a facing of boulder or field stones, the interstices filled with spawls. Some of this ancient masonry is admirable; the side wall of the gateway of a Cashel near Enniskillen, County Cork, is shewn on lithograph accompanying number for January 1, 1872. The names by which these constructions are known are various; as a general rule, when formed of earthen ramparts, they are called *Rath* and *Lios*, pronounced *Ra* and *Les*; when constructed of stone masonry, the terms *Cathair* and *Casiol*, pronounced *Cauhir* and *Cashel*, are applied to them. By ancient native writers the term *Dun*, pronounced *Doon*, signifies not only a defensive structure of any description, but is also applied to the residences of kings and chiefs, which were always enclosed by ramparts of earth or stone. O'Brien thus defines the word *Rath*: "A fortress, a garrison, also a village; also an artificial mount or barrow: *Riogh-Rath*, a prince's seat." O'Reilly's *Ir. Dict.* gives the same definition.

Some writers have identified this word with the Teutonic *Rath*, as in *Reichsrath*, *Rathhaus*, &c., but the similarity does not go beyond sound, as the latter signifies an assembly, a convocation. The term *Lios*, according to O'Brien's and O'Reilly's dictionaries, signifies "a house or habitation; also a court or palace; also a fortified place; genit. *lis* and *leasa*."

Cathair, pronounced *Caer* and *Cauhir*, is thus defined by O'Brien:—"Cathair, a town or city; plural *Catraca*, and in its inflections *Catraig*; Brit., *Kaer*; Schythice, *Car*; antiq. Saxon, *Caerten*; Goth., *Gards*; Cantabr., *Caria*; Breton, *Kar*; Hebr., *Kariah* or *Kiriah* or *Karth*; Phoenice and Punice, *Kartha*; Chaldaice, *Kartha*; Syriace, *Karitia*; Græce, *Karak*." It is evident that this term, which is very general as a topographical name in Ireland, is one of great antiquity, as we find it to designate a city or fortress in all primeval languages, and was doubtless brought from the East by the early colonists of this island. We find it applied as a prefix to the names of the most ancient cities of the old world, as *Car-chemish*, *Car-thage*, *Car-teia*, *Carmona*, *Car-ula*, *Car-duba*, *Car-iata*, *Carina*, *Kars*; an ancient name of the Tyrian Hercules was *Malek-Karthus*, or *Mel-Karthus*, i.e., the King of the City.

Casiol is given by O'Brien as "the foundation of a wall or building, also, any stone building"; and "*Caiseol*, vid. *Caisiol*, a bulwark or wall, any great rock." He also gives—"Casiol, Ciosail, i.e., all an chiosa, a toll stone, or stone whereon tribute was paid." The number of these constructions must have been very great; Dr. Joyce states that the term Rath enters into the composition of the names of 700 townlands, while the syllables *ra*, *rah*, *ray*, &c., as representatives of *Rath*, commence the names of 400 townlands. Of the term *Lios*, he states that it begins the names of 1,400 townlands and villages, and that this number can be considered only a small portion of all the *liases* in Ireland; he also states that there are over 300 townlands and towns whose names have the prefix *Caher* or *Cashel*. Again, we have the term *Dun*, pronounced *Doon*, extensively used by ancient native writers to denote a fortress and a fortified residence; thus O'Brien gives us—"Dún, a strong or fortified house, a fortress or fastness, a habitation built on a hill or mount, . . . but the true meaning of this word in Irish, is a strong and well barricaded habitation, as appears from our having no other verb, at least in common use, to signify the act of shutting or making fast, but *Dúnaim*, which in its second personal singular of the imperative mood, makes *D n.*" Dr. Joyce states that this term

gives name to 27 localities, and that it is used as a prefix to 600 townlands, towns, and parishes. The sea-coast fortresses so general on the southern and western shores, are almost invariably termed Duns; they were generally constructed upon headlands and rocky eminences jutting into the sea; in very many instances where the projecting land was protected by the sea and steep precipices, excepting at one side, which was fortified by one or more ramparts of masonry or earth, with corresponding fosses; the headland itself was designated as a Dun. In the Arran Isles we have preserved to us some remarkable specimens of these sea fortresses, as Dun Aenghus, Dun Connor, and Dun Eochail, which are stone-built and of great size and strength.

The details given above afford us but a limited idea of the number of Rathas that must have existed in the country; some notion, however, may be formed from the following fact:—At a meeting of the International Congress of Prehistoric Archaeology, in 1869, Col. Lane Fox, F.S.A., stated, that at the time of the Ordnance Survey of Ireland, there were found in the province of Munster alone, over ten thousand Rathas. Now, if we take into account the dilapidations of ages, the progress of road making, drainage, and agricultural operations, through the last two centuries, we may fairly admit that even the above does not represent one-fourth of the number originally in the province.

As it is important, for many reasons, to get a clear view of the probable antiquity of the Rath or Dun, we will apply to the best sources of native information available for that purpose; fortunately our ancient annals make frequent reference to the erection of those fortresses as well as to their builders. In the *Book of Ballinote*, fol. 23, we are informed that in the reign of Eremón, the first Milesian Monarch of the northern half of Ireland, the following fortresses were constructed:—"Dun-Sobairce (Dunseverick); Dun-Cearmna (Old Head of Kinsale); DunmBinde; Carraig Blaraidhe (Carrickfergus) in Murbul, by Mantán son of Caichear; Toctar-Invir-Moir, in the district of Hy-Neineachlas of Cualan, was erected by Amhergin son of Milidh; Raeth-Aird-Saileach, in Fanaid, by Fulman; Raeth-Righbaird in Muirisc, by Eaton son of Uige; and Rath Croich, in Ard-Etigh, by Unson of Uige" (Dr. Connellan's MS. Translation of the B.B.).

The *Annals of the Four Masters*, A.M. 8520, records the erection of the following Rathas in the reign of Irial, the son of Eremón:—"Rath-Croich, in Magh-inis; Rath-Cuin-ceadha, in Seimhne; Rath-Bacain, in Latharna; Rath-Lochaidh, at Glascham; Rath-Cimbaoth, at Eamhain; Rath Mothaigh, Rath-Buoig."

Duald Mac Firis in his *Book of Genealogies*, compiled from the most ancient sources accessible in his day, refers by name to the builders of several of the most remarkable fortresses in the country, who are divided into Rath-builders (Rath-buidhe), and Stone-builders (Caisleoir); he mentions, Troithleathan, the Rath-builder of Tara; Bainche or Bainchin, the Rath-builder of Emania; Balur the son of Buanlamh, the builder of Rath-Breisi; Cricil the son of Dubhcrut, the builder of the Rath of Ailinn; Ringin and Gabhlan, the Stone builders of Ailech; Casruba, the Stone-builder of Ailinn; Bolo the son of Blar, the Stone-builder of Cruachan. (O'Curry's *Lectures on the MS. Materials for Irish History*, p. 222.)

I think, in the authorities above quoted, we have ample evidence to prove that Rath building commenced several centuries before the Christian era, and that fortresses both of earth and of masonry were then constructed. In my first chapter I have given some account of the great stone-built forts of Staugue and Ballycarberry, and also of that known as the Grianon of Aileach, and have described their masonry; yet equally interesting in the study of early Irish stone-work are the Rathas, which, though earth-ramparted, afford us

examples of perhaps the earliest masonry in our island.

It is now well known, that the majority of our Rathas and Cashels have within their internal areas, and beneath the surface, crypts, constructed of masonry, on a variety of plans and shewing a variety of arrangements of a curious and somewhat inexplicable character. These substructions consist of chambers, rectangular, square, oval, or circular on plan, approached by long, low, narrow passages, and connected by shorter ones when there are two or more chambers in the group. The latter have their walls constructed of uncemented masonry, often of a rude character, but frequently of excellent workmanship. When they are rectangular on plan they vary from 15 ft. to 80 ft. in length, from 4 ft. to 9 ft. in width, and from 4 ft. to 7 ft. in height, and are covered by massive slabs of stone reaching from wall to wall, except in cases where long flags could not be procured; they are then supported by others, corbelled from the walls.

The approaching and connecting passages are constructed in a similar manner. The oval and circular chambers seldom exceed, the former 12 ft. by 8 ft., the latter 8 ft. in diameter; the encircling wall is raised from 2 ft. to 4 ft. from the floor, and the space domed over by flat stones on the overlaid principle, usually of rude workmanship: in many instances the domes spring direct from the floor. In some examples the walls of both passages and chambers are constructed of flags set on edge, the irregularities being filled with small stones. I have seen several instances where the chambers and passages are excavated out of the earth, when the strata was found to be hard and suitable; but in such cases the entrance for some distance was built and lintelled with stone.

A remarkable and universal feature in the Rath Souterrain is the provision made for concealment and obstruction. The chambers are in some cases connected by low narrow galleries, so contracted as to afford barely room for a man to force himself through on all fours. In others a stone slab is placed across the passage, built into the wall at each side, and leaving scarcely sufficient space between it and the roofing slab for a person to pass through, and that with difficulty. In others, when you get to the end of a chamber you find it built across, but overhead you meet a small aperture from 18 in. to 24 in. square, ascending through which, you perceive yourself in a small apartment, and again descending through a similar aperture you gain another chamber beyond. The object of these arrangements I shall not at present discuss; but it is a curious fact that similar peculiarities are to be found in the Etruscan Souterrain, as described by Dennis in his *Cities and Cemeteries of Etruria*.

I have selected a few examples of these curious substructions, which cannot fail to interest the antiquary and architect. The examples on accompanying lithograph are from the County Clare, and were the subjects of a paper by the late Mr. Thomas Cooke, of Parsonstown, contributed to the *Proceedings of the Kil. Arch. Soc.*, v. 1849-51, p. 294. No. 1 are the chambers of a Rath at Parkmore, in the Barony of Burren, County Clare. The Rath has two concentric ramparts, with corresponding fosses, the internal diameter being 120 ft., the external 214 feet. The ramparts were of considerable height; the material clay, faced with stone. Mr. Cooke thus describes the souterrain:—

"The opening to the souterrain here is about the centre of the fort. The first gallery, A B (see diagram No. 1), runs in a south-westerly direction from the entrance. It is twenty-six feet long, six feet high to the ceiling, and the same number of feet in breadth. The side walls are roughly formed of large stones, rudely yet substantially put together; and the roof is made of immense flags.

"At the end of the first gallery is a passage (B C) about five feet in length, but only three feet and a-half high, by two feet wide. The floor of this passage is on a level with

that of the gallery already mentioned. In order to pass through this confined communication one is obliged to crawl on hands and knees. When by this inconvenient kind of locomotion you arrive at the end of the passage, you find it terminated by a wall built right across its breadth. The only way by which to advance farther is by ascending through a square hole (C) overhead, the breadth of the side of which is somewhat less than that of the passage, it being only one foot nine inches. On emerging through the opening C, you find yourself in the little chamber C D, which is no more than seven feet long by five and a-half feet broad, and only four feet high. If you would hence proceed farther, you must descend through the square opening D, which is similar to that at C, and creep from thence, as before, through another low and narrow passage, also five feet long by three feet and a-half high and two feet wide. This last-mentioned passage brings you to another gallery, G H, which runs at right angles to the gallery before described. It is fourteen feet long by nine and a-half feet wide and six feet high. Opposite to this passage, D E, another passage, I K, leads, as a kind of sally-port, to the exterior of the inner rampart of the fort. The last-mentioned passage is five feet long by two feet wide, and four and a-half feet high. The flag which was placed outside this aperture was four feet square."

The arrangements of the Rath Caves at Finvarra, a mile west of New Quay, in the same county, are of a different character (see plan and section on plate), and are thus described by Mr. Cooke:—

"This cave consists of three chambers, each disposed as represented in the diagram, No. 3. The outside chamber A, is twenty-one feet long, five feet wide, and as many in height. It is connected with the middle one by a passage five feet long, three feet high, and two feet wide. This opens like the passage in the cave at Murtyclogh, into an elevated platform in the end of the middle chamber by a square hole, B. From the middle chamber, which is twenty-five feet long and seven feet wide by six feet high, and which lies at right angles to the outward one, an aperture about two feet wide and three feet high opens into the inner or third chamber, D, which is parallel to the middle chamber. The floor of the third chamber is about five feet lower than those of the other two; and the threshold of the aperture leading into the third from the second chamber is about four feet over the level of the floor of the third chamber. This last mentioned chamber is six feet wide by six feet high, and twenty-five feet in length. In one end of the third or inner chamber I found at E a large flag, in form a parallelogram, resting on four upright stones, which served as feet, and supported it from the ground. Under this flag there were some bones. Dr. Molyneux has described a somewhat similar tomb or altar, discovered near Waringstown, in the County Down, in 1684. He writes—'In the middle of the vault were fixed in the ground four small long stones, each about two feet and a-half high, standing upright, as so many legs, to support a flat quarry stone, placed upon them in manner of a table. This rude stone table seemed designed by the heathen founders as an altar to offer sacrifice upon for the deceased. Under the table on the ground was placed a handsome earthen urn; it contained broken pieces of burnt bones.' Although I did not meet with any urn at Finvarra, it is exceedingly probable, if not altogether certain, that the inner chamber was a place of sepulture for some once great, although now forgotten, personage."—(*Ibid.*, p. 297.)

Sir William Wilde, in his interesting and valuable work on Lough Corrib, has described similar artificial caves on the plain of Moytura, County of Mayo. Though differing in plan, they have a remarkable similarity in the arrangement of the passages connecting the chambers, and the means adopted for obstruction or concealment. That at Kildun he thus describes:—

"Its direction is from south-west to north-east; but from the great variety in the line of these *souterrains*, it is manifest their constructors paid no regard to the points of the compass. Descending through an aperture at the low, narrow, southern end, which is now only 3 feet high, we pass into a chamber 22 feet long, but widening and deepening towards the northern extremity. It is 6 feet wide, and 4 feet 9 inches high; and in the lower part of the end wall there is a horizontal passage, about 3 feet square and 6 feet long, at the end of which a perpendicular shaft or chimney, 18 inches by 30, rises; getting through which, we land on a platform of masonry, 8 feet 4 inches high: beyond which is another larger chamber, 24 feet long, and averaging 6 feet wide and 7 high, roofed over, like the southern portion, with immense flags that span the top. In the left corner is a small square recess, like a cupboard, and overhead a small aperture through which light and air were admitted. This end of the cave approaches the outer circle of the fort, with the wall of which it may have communicated."

"The upper diagram shows the section, and the lower the ground plan, of this great cave, which is altogether 54 feet in length. A marks the first hall, with its descending entrance; B, the low, narrow, connecting passage; C, the perpendicular shaft; D, the ledge at the southern end of E, the second or great hall, at the extremity of which is the recess and ventilating aperture."—(p. 204.)

After some critical remarks on the above example, he proceeds to describe the Rath caves of Cuslonghe:—

"Another form is the Angular or Crooked cave, of which that at Lisheenard in Ashford, described at page 184, is an example; but one of the most curious of this class is that at Coolsughoga, or Cuslonghe—the 'rat's foot'—which is placed within the circle of an ancient fort near Calliaghdoe, about midway between the roads leading to Cross and Ballinrobe. Scrambling down through the narrow, dilapidated north-western entrance, we get into a chamber—marked A on the following ground plan—21 feet long, 7 high, and 6 feet 3 inches wide, and running nearly east and west. The roofing flags are of immense size, and supported on corbels that jut inwards for about 9 inches. At the extremity of this hall the walls narrow, and a small door appears, as shewn in the left hand cut at top of the illustration given on the opposite page. Creeping through this very small doorway, we get into the second or larger apartment, marked B, which is 24 feet long, and differs from that of most other caves in having the western side wall composed of large upright flag stones, not unlike those that support the roof of the passage into New Grange; and, like those of that remarkable structure, some of these are indented with artificial depressions along their sides and edges, as shewn in the lower compartment of the following illustration. We have not, however, as yet found on any of the Moytura caves those peculiar carvings, spires, lozenges, and volutes, such as characterize the caves of Meath. Either such were not known at the period of the construction of the Mayo caves; or, what is more likely, they were only used in sepulchral caverns, and probably expressed ideas connected with the life of the deceased, or the artist's ideas of futurity."

"This second chamber turns somewhat to the north, and is curved round its extreme angle, in the southern side of which we meet the high doorway shown by the second top figure in the foregoing illustration. From that, a narrow passage leads through a very small aperture at its top, over a barrier similar to that in the cave of Kildun, into a third or northern chamber, 22 feet long, marked C upon the diagram."—(*Ibid.*, p. 206.)

At a late meeting of the Institute of British Architects the presentation was announced from Lady Tite of a large water-colour drawing representing the buildings of Inigo Jones. Mr. J. T. Perry read a paper on the "Mediæval Brickwork of Pomerania."

WHAT IS ADIPOCERE ?

(Continued.)

In my last paper I have described what adipocere is, and possibly my readers will agree with me, from the authorities given, that this substance is never produced by absorption or the drying away of animal fluids.

In examples of the Egyptian mummy we have in a very few instances some trace of adipocere remaining; but, after all, it is only a trace, and is generally acknowledged to be produced by the salt used in the less expensive process of embalming the remains of the poor. Salt, while it is a preservative of animal substances, is of all other products the most rapid absorbent of moisture from the atmosphere: therefore it is to this circumstance alone we must attribute the formation of adipocere in them.

The term mummy, derived from the Arabic "mum," signifying wax or resin, is applied indiscriminately to all dead bodies preserved either by artificial or natural causes; but it by no means follows because its derivation is wax that it means adipocere—resinous material of some description or another being used to produce the best examples of the artificial mummy; adipocere is only formed by moisture, and never occurs in mummies except in the instance above given, and then upon a very small scale indeed.

It is not my intention here to enter into the various processes by which the preservation of human remains has been effected in ancient times. Of all nations of the earth, the Egyptians have most excelled in this; therefore it is enough for me to remark that by them mummies have been rendered the more enduring through countless ages, according to the greater or less expensive modes of embalming resorted to. Amongst the rich this was accomplished by the removal of the brain and viscera, and filling the interior with aromatic resins and bitumen; but with the poor an injection of some astringent oil, as petroleum, with salt dissolved in it, was deemed sufficient. If we are to credit Mark Twain, in his sequel to "Innocents Abroad," to some an amusing instance of the different modes of preservation adopted is realized at the present time, although it may be revolting to many.*

Those who take an interest in the preservation of Egyptian mummies are referred to Diodorus Siculus (*Biblioth. Histor.*, lib. i., cap. 91), or to *Description l'Egypte*, written from the experiences of members of the institute accompanying Napoleon the First in his Egyptian campaign.

I have said instances of the preservation of human remains, such as exist at St. Michan's Church, Dublin, are very rare. We have but one exactly similar instance recorded in Europe, and this occurs in a vault in the Cathedral Church, Toulouse (France), where a vast number of bodies are found dry, and without a trace of putrefaction. It is well known that in Africa bodies buried in sand are preserved, and even if afterwards exposed to atmospheric influences, do not decay. In the dry climate of Peru similar instances occur, and in many parts of the country, particularly about Arica, a vast number of bodies have been discovered perfectly preserved in graves dug in sand, with no trace whatever of artificial means being used.

In the Royal College of Surgeons, Ireland, there was a few years ago—and I suppose it exists there still—one of the best possible representatives of preservation of human remains by absorption. It is a Peruvian mummy, in a sitting posture, with the knees nearly touching the chin; and as the ancient Peruvians were always interred after this fashion, it is not unreasonable to suppose this is a fair example of preservation by absorption. It was brought into this coun-

* "I shall not speak of the railway, for it is like any other railway. I shall only say that the fuel they use for the locomotives is composed of mummies three thousand years old, purchased by the ton or by the graveyard for that purpose; and that sometimes one hears the profane engineer call out pettishly—'D—n these plebeians; they don't burn worth a cent! Pass out a king, will ye!'"—*New Pilgrim's Progress*, page 244.

try about 80 years ago from Caxamarca, and presented to our College.

In extreme northern climates animal substances are preserved for considerable periods. In regions of perpetual frost they endure for indefinite time, as is exemplified in the remains of the mammoth discovered in Siberia in 1799, embedded in ice, and which, it is supposed, was a living specimen before the creation of man; yet so fresh were its remains when thawed away from the boulder of ice in which it was encased, that dogs and wild animals ravenously fed upon its carcase.—(*Vide* 5th vol. *Memoirs of the Imperial Acad. of Sciences of St. Petersburg*. (London.)

From what I have attempted to shew, preservation of human remains from natural causes may be classified under three heads—

First, from absorption, which is, perhaps, the most general and accessible, as occurring continually in warm climates.

Second, from tannin, or immersion in peat mosses, and which is produced by tannic acid permeating through every pore of animal substance when embedded in bog material.

Third, from congelation, where decomposition is instantly arrested, and which is the most perfect of all preservation from natural causes.

That adipocere can be acknowledged as preservation I do not admit: it is but a chemical change, operating only upon a portion of animal remains—the muscular tissues; while it permits the remainder to be wasted away without putrefaction, leaving only a shapeless, unrecognisable record of departed humanity. W. H.

SIR PHILIP CRAMPTON'S PEAR TREE.

THE following letter from Dr. John Hamilton, 14, Merrion-square, N., appeared in the columns of *The Garden* last week. It is accompanied by a wood engraving showing the tree in blossom, and spreading itself over three storeys of the house. Perhaps if the tree should grow too unwieldy in its present position it, together with the "Crampton" monstrosity in College-street, could be transferred to Glasnevin.

"I read in your journal of 2nd of August some observations from a correspondent on the pear tree in front of my house, which was planted by the late Sir Philip Crampton in 1815. The article, with some few exceptions, is correct, but I do not think it assigns the real cause of the fertility of this town tree. In spring it presents a most beautiful display, being covered with a sheet of white blossoms, arranged in many parts in bunches, like so many wedding bouquets. The end of the stem and root are imbedded in earth, kept up by a wall of brick about 18 inches high. The large roots have ample room in the soil (which is fine clay) under the area flags. It is carefully manured every second year, and properly pruned by a skilled gardener every year. I believe, however, its great fertility depends on its having a sewer passing about 3 feet in front of it. This sewer runs a short distance along the area to join the main sewer. It receives only the slops from my study basin, containing a good admixture of soap-suds, with an occasional dash of blood. Some few years ago I had this sewer opened, and I found that all the small roots (with a few trifling exceptions) went through the joinings into the sewer, as if guided by instinct to where they would find the greatest nourishment and the greatest moisture. So thick were they that they resembled bunches of birch broom, and threatened to stop up the sewer. You will better judge than I can whether this is the cause of the tree being yearly loaded all over with pears, single or in bunches, one bunch (of which I send you a photograph) containing twenty-two pears. Whether, also, it accounts for its luxuriant growth; for, did I let it, no doubt it would cover the whole house. To check its ascent

I do not allow it to get much above the base of the third storey windows, as, even at that height, it is troublesome to put up and fix sufficiently high ladders, and it tries the nerve of the gardener to nail and prune a tree so high from the ground. It faces due south, and therefore has a warm sunny aspect, and bears fruit every year, but not always so abundantly as this season. The prevalence of a cold easterly wind during the period of blossoming has a powerful effect in checking the quantity of fruit, and sometimes an open street on a line with this side of the square brings that wind full on it. Sharp frosts also materially affect it. The pears gathered this year numbered 1,700."

GEORGE FRANCIS TRAIN, AND THE TRAMWAY SYSTEM.

LET not our readers anticipate a dissertation on the vagaries in the political world of George Francis Train. With his politico-religious views, if any, or his eccentricities, we have nothing to do; but we feel, and have long felt, that the man has been badly treated, both by Englishmen and Irishmen, in respect to his pioneer efforts in these islands to introduce the tramway system. It is now some years since he received provisional powers to lay down a short line of tramway in London, to prove the utility of that kind of locomotion. Almost from the outset, obstacles were thrown in his way by various parties, to thwart his efforts and to render his plans nugatory. He proved to a demonstration that the tram was an improvement and a necessity; yet interested partisans never rested until the tram he had succeeded in laying down at an expenditure of a great deal of money was again rooted up from the streets. We have reason to believe that some of the very parties who were instrumental in throwing ridicule on poor Train, and thwarting his most useful project, are at the present moment rampant advocates for tram lines, and directors of them. Not long after Train's labours were frustrated, Englishmen applied for powers to commence again the work the American had first begun, and which they had helped in destroying. We have seldom known a greater act of injustice perpetrated against a foreigner than the one we allude to. Tramways are now laid down, and are being laid down, on all sides of London, and in the chief cities of England, as also in Scotland, and here. Few are found now with sufficient hardihood to say that they are nuisances and obstructions when properly laid down, and on thoroughfares of sufficient width.

An act of reparation is due to Train as the introducer of the tramway system into England; and it would only be a small recognition of a signal service if the tramway companies of Great Britain united in presenting George Francis Train with a fitting and substantial testimonial for the benefits he conferred. They are certainly reaping the profits that sprung from his advocacy and labour. The Corporation of London and the Metropolitan Board of Works have carried out many valuable improvements of late years, and these bodies have voted large sums as gratuities and testimonials to individuals who were instrumental in the work of improvement and reform, though they otherwise were paid for their professional services. The tram system is a great acquisition to the lightening of the heavy traffic of the metropolis, and directly and indirectly it has benefited the trade of the great metropolis. What it has done for London on a large scale it is doing for other cities and towns in a proportional way.

It is not long since an announcement appeared in the public papers that poor Train's mind had given way, and that he was remitted to a lunatic asylum. We believe, however, that this report was afterwards contradicted. What Train may be engaged on at present, we have no conception: of his whereabouts, as we write, we are in complete ignorance; but, supposing him to

be at liberty and in health, his active brain, it may be safely asserted, is engaged with many projects, some of them possibly foolish enough. We trust the liberal organs of London will, despite of the man's many political vagaries, do him justice. The *Daily Telegraph* of London has never been slow to speak a word in favour of native or foreigner overtaken by an unmerciful disaster, and by its advocacy more than once succeeded in snatching the victims of circumstantial evidence from the gibbet. Poor Train is no criminal, although guilty of folly that may not be defended, but for his efforts in the public service, and as the pioneer of the Tramway system, he deserves to be remembered and requited.

CIVIC LYRICS.—No. L.

THE REIGN OF GUTTER.

Dirt is only another name
For a very useful matter;
Filth it is pretty much the same,
And we have the first and latter.
Long live the wholesome nuisance here,
With our Civic broil and splutter;
Twine a wreath for our Engineer—
Hurrah for "the Reign of Gutter"!

How long shall stupid laws of health
Be imposed upon the people?
Shall Civic power still waste its wealth
On slums 'neath Patrick's steeple?
Perish the thought, ye men of straw,
Of tallow, and pork, and butter!
The local will is the primal law—
Hurrah for the Reign of Gutter!

Let Dirt be free in home and street;
There is reason in the fitness
In having dirt at fever heat—
That its fruits all men may witness.
The children love the muddy pools,
With a joy they loudly utter;
Give them the streets for infant schools—
Hurrah for the Reign of Gutter!

The pig has often paid the rent,
Though housed in the human dwelling;
The landlord does not mind the scent,
Except when it is a selling.
Snug in the chimney corner still,
It grunts if it cannot mutter.
Leave it alone till fit to kill—
Hurrah for the Reign of Gutter!

Bury your dead; but wake them first
In the true Milesian fashion.
Let the corpse for a week be nursed,
Or you'll rouse the mourners' passion!
If you have got no decent bed,
The door or the window-shutter
Will do to stretch the fever'd dead—
Hurrah for the Reign of Gutter!

This is the way to shew mankind
We are active in improvement,
Leaving a low Great Britain behind
In our sanitary movement.
Thus shall the Civic power win fame,
Tho' the Crown in rage should sputter;
Three cheers for Dirt! "What's in a name?"
Hurrah for the Reign of Gutter!

CIVIS.

THE LATE DUBLIN EXHIBITION.

THE Exhibition building finally closed upon Saturday, the 24th ult. The collections will go back to their owners, the wealthy and idle will lose their favourite promenade, and we are unable to say what will be the future fate of the building. We regret the loss, though we had occasion to comment upon the defects of the late management. The Messrs. Guinness are entitled to thanks, but those who mismanaged the exhibition are not. If the merchants and gentry of this city possessed proper public spirit, we would have had a lasting exhibition; but so long as we have a Corporate body as well as a large part of society begging at the tails of rich private individuals to open new streets and exhibitions, what can result but failure? Individuals of wealth may do much; but it is the public spirit of the many, and good organization and practical management alone, that lead to success.

UNKNOWN DUBLIN.

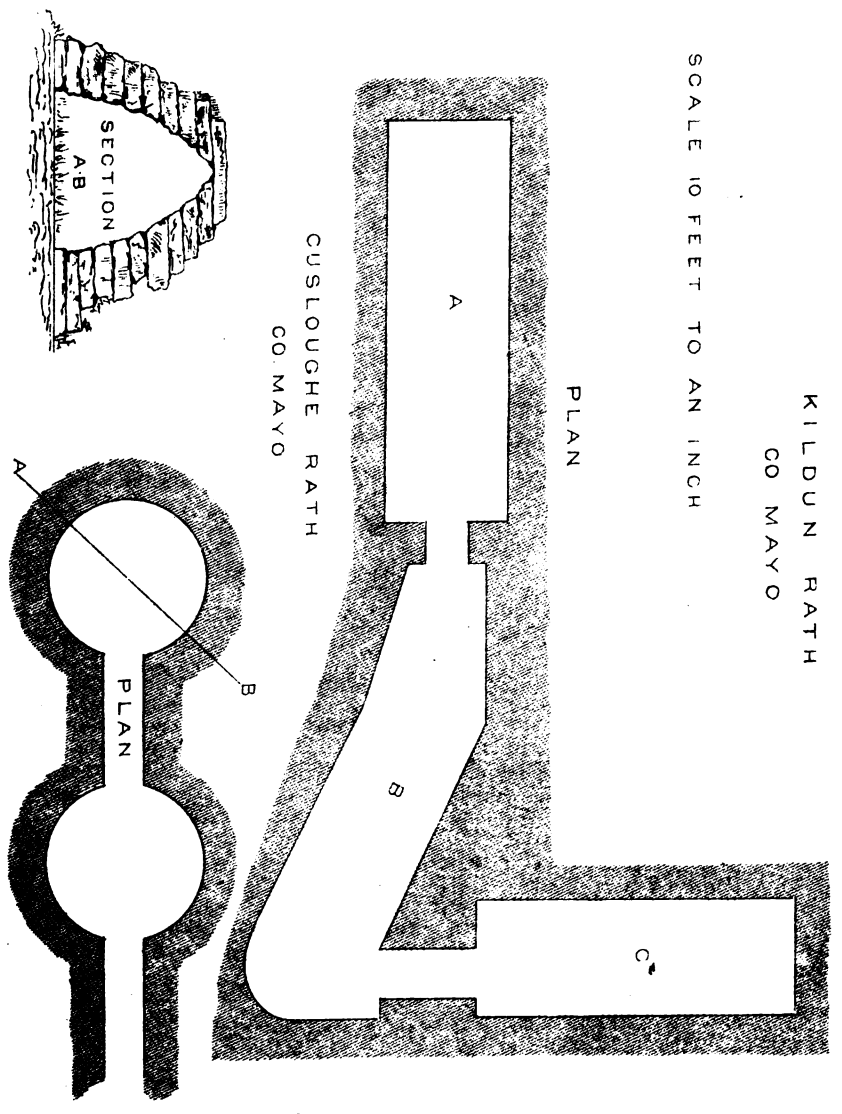
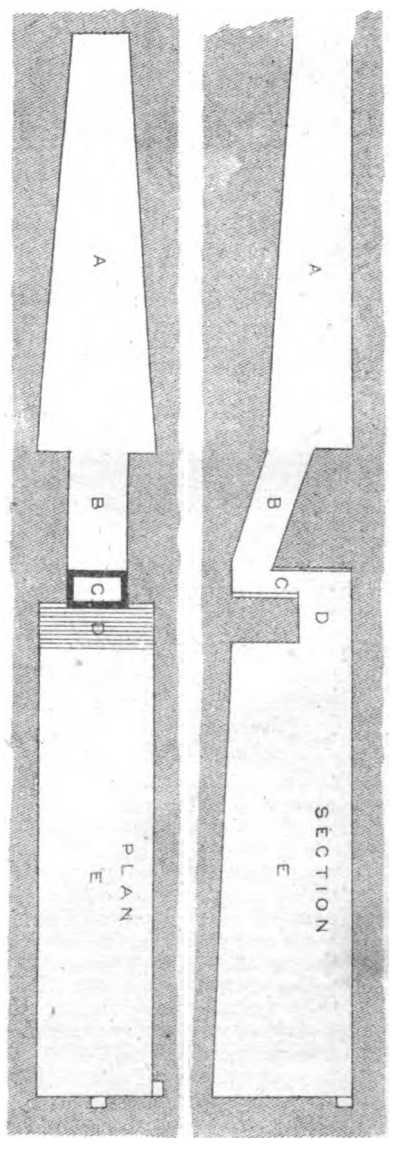
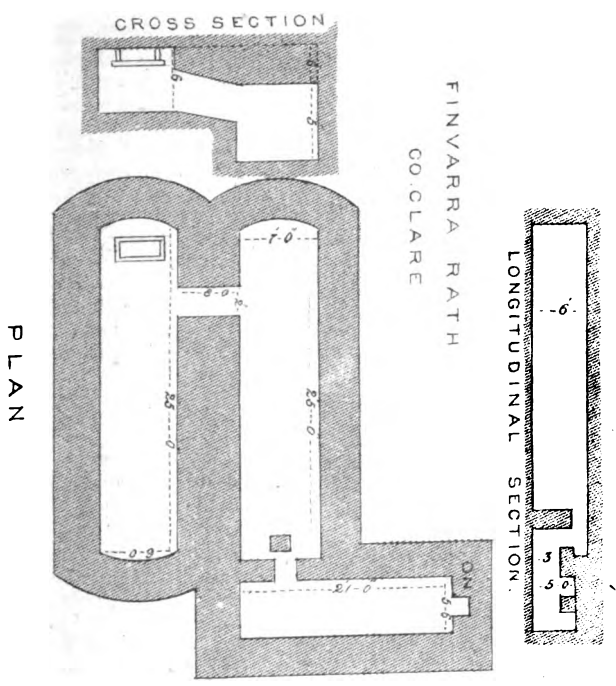
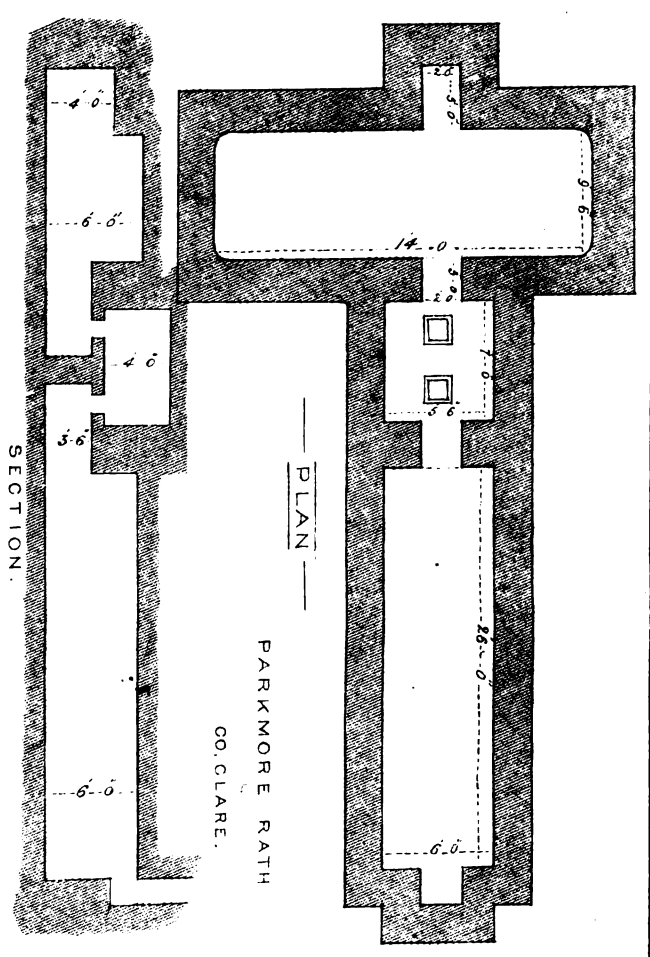
BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

LITTLE SCANDINAVIA-STREET.

ALTHOUGH in the hands of the brokers for many years, this short and woe-begone street has long memories. With the dawn of the nineteenth century it could boast of a good backbone or spinal marrow, and the counting-houses and stores of wealth exporting and importing merchants whose names were towers of strength and credit on 'Change. All are gone to-day, alas! gone long since with the falling leaves of forty autumns back. Lofly lofts and warehouses with their windlasses and tackle, and extensive warehouses piled with bales and sacks of foreign merchandise, and deep and capacious vaults with bins well filled with the best vintages of France and Spain—these and other evidences of bustling life and trade no longer exist in Little Scandinavia-street. Remnants of old warehouses still exist here in the back places, in ruin and dilapidation. The rats of the neighbourhood have now no spices, oils, drugs, or succulent seeds to nibble; floor after floor dropped down, and the old wine-cellars have ceased to afford food or shelter for them or the well-fed mousers that perambulated with their tinkling bells, and who were objects more of ornament than use in their masters' service. The house fronts are dirt-begrimed; the window sashes rattle with the wind, and the panes of many give their transparency through a medium of card-board, brown paper, or an antiquated caubeen of the primal type. If the brogue is no longer to be heard in the street, an assemblage of brogues may be witnessed in the shop windows, and the sons of Crispin are to be found sticking to their lasts, and will evidently be the last of the denizens who will desert this quarter. Our cicerone, who accompanies us on our visitation, will throw further light on the retrogression and belongings of the place, so we will let him speak:—

"Little Scandinavia-street in my young days, sir, was a street that many coveted to live in; but there was not room or accommodation for all that aspired to that honour. Its days of affluence were not very prolonged, but in its meridian it was bright and redolent of actual life. When the blast of adversity came, one after one the props fell, and in a short time the street was left to its fate; and an unfortunate fate, as you may behold, has overtaken it. Opposite where we are standing you see an old brick edifice, hardly noticeable to the passing stranger, from its quiet and gloomy appearance. It is an almshouse, and one of those for which our poor city was once remarkable. It has often struck me with wonder, sir, what has become of several of the alms-houses and other charitable infirmaries that existed formerly in this city. It would be worth while to trace their history, how they originated, and how they succumbed. I fear much that a commission of inquiry would reveal many startling facts of lay and clerical spoliation and plunder, of trusts dishonoured, and funds made away with to aggrandise private families—funds and bequests that were left for objects of charity by several of our old and benevolent citizens in former years. Yonder alms-house was founded by Tristram Fortick, and over the door you may read—'This Charity House was built and endowed in the year 1755, by Tristram Fortick, a citizen of Dublin, late of Fortick's Grove, in the County of Dublin, Esq., for the use of reduced women who had lived in good credit and repute.' Some of our authorities put down the date of the foundation in 1789. This worthy citizen lived for many years in the last century at Clonliffe (Jones's-road), in a house called Fortick's Grove, after the owner, and subsequently inhabited by Frederick Jones, the patentee of the old Crow-street Theatre. Fortick's Grove, Clonliffe, is now the site of the Catholic College. Tristram Fortick's gardens at Clonliffe were celebrated, and many citizens used to visit Drumcondra for



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the sole purpose of seeing them. Figures here of men in various positions, and of animals and fowls and birds, were to be seen out in yew and box. The most fantastical gardening that could be conceived was carried on with shrubs, plants, and flowers of all kinds; but gardening of this sort was common in Dublin and other counties in the eighteenth century. This aside, sir, the good works of Tristram Fortick survive him; and I hope his charity is properly administered, too. It is long enough established to have doubled and even trebled its original value. The parish of St. Mary has been noted for bequests from benevolent donors; but of some of these I will tell you at more length hereafter.

"That stone-fronted building, now a boys' school, was formerly the Dominican Chapel. The friars of this chapel originally belonged to Bridge-street, but a few years since the chapel here in Scandinavia-street was deserted by the brotherhood, as they succeeded in building a finer edifice for their order in Dominick-street, from the designs of Mr. J. J. McCarthy. The Scandinavian Chapel was remarkable for what were called 'short masses,' and was much resorted to in consequence by others besides those whose time was an object. Servant, cabman, watchman, Sunday trader, or other hurried mortal might pass into the Scandinavian friary at any moment and satisfy his conscience with a half hour's or fifteen minutes' service, as two masses were always proceeding at the same time—one half over when the other was commencing. For the sake of hearing a short mass I have often known people, sir, to trudge in from Clontarf and Drumcondra, so as they might escape a long sermon, and have the best of the day for amusement. 'Where are you off to, Pat?' was often heard from one buck, interrogating another on a Sunday morning. 'Off to the short mass, to be sure,' was the rejoinder. Situated alongside the friary there were formerly some fine old red brick mansions, occupied by wealthy wholesale merchants; and if I remember aright those remaining yonder are some of them. There is one of those fine old dwellings which were formerly well worth seeing within, from the good workmanship they exhibited in their framings, fittings, and plaster ornamentation. The conversion of these houses into tenements has destroyed them, and they are no longer in their interiors or in appearance what they were once.

"At No. 4 in this street upwards of half a century ago was the establishment of Nugent, Orson, and Co., husbandry artists; and at the same place for many years was carried on the well-known coach-making establishment under the same name. William Nugent was a member of the Common Council of the old Corporation for many years, being one of the representatives of the Guild of Merchants, or Holy Trinity Guild. It is not long, sir, as you may remember, since the last link in the firm disappeared from here, and the noted coach factory was given up to be occupied by a firm in the paper trade. Coach-making in this city has undergone strange vicissitudes since the dawn of the century. Almost every street had a firm, and many of them a half dozen of flourishing ones; but we have been descending from coaches to wheel-barrows, from silk to rags, and from rags to paper collars and curtains. What next?

"Upwards of thirty years ago, at the commencement of the teetotal movement, there was a noted temperance cordial shop established within a few doors of the Friary Chapel, where the lovers of short masses and short pipes used to resort for a warm drop of teetotal stuff. Mr. Glenning got the credit of making the pure stingo, which possessed all the lively qualities of the *cratur* without its upsetting effects. Here ginger beer, raspberry vinegar, shrub, lemonade, spruce beer, peppermint, ginger cordial, and other new-fangled varieties of Mathews' cordials were vended to temperate folk or teetotal abstainers. Labels on the windows told the virtues of the liquors within, and poetry as well as prose was enlisted to sound the

praises of the soothing syrups. One might read the following:—

"Superior pop and ginger beer
Always ripe and ready here;
If your pop was as good as mine,
It would be sold instead of wine."

"Paddy Glenning informed his customers and the lovers of short masses that 'Hot Coffee Always Ready' was to be had for the trouble of calling for it and paying the reckoning. Peace be with you, Paddy, and may the larks sing lightly over your grave; and though you received the distillers' curse, in life your grocer had reason to bless you for the quantities of coffee and sugar you consumed. The Scandinavia market, extending from here to Coke-lane, has gone to the dogs, sir, many years ago. Fifty years since it even had as suspicious a name as Bully-alley. The denizens on the north of the Liffey looked upon Scandinavia Market as something akin to a knacker's shambles, where the heroes of Red Cow-lane were wont to dispose of the disharnessed animals who were turned out to grass and died of their own accord in disgust with mankind. Poor brutes! they deserved a better fate than being worked to death, and eaten up afterwards by their masters at 4d. a pound. The old market alley still exists, but the fleshers have taken up their pole-axes and blocks, and walked. The market I believe, sir, originated about the same time as the Lying-inn-street one, but its glory was a short-lived one. Having got a bad name in the beginning—whether rightly or wrongly I cannot say—but the brand stuck to it like a barnacle, till the market died of inanition.

"The last of the old merchants that lived in Scandinavia-street was John Donnelly, at No. 28, nearly a half a century in the trade, and dealing in seeds, wines, and other foreign and native produce. His house still exists, and is a good specimen of the old red-brick dwellings of the last century. The house is still represented in the trade by Mr. Edward Cannon, the successor to A. Donnelly. In 1786, Mathew O'Reilly, merchant, carried on business at No. 27, which business lasted into the present century.

"Scandinavia-street could boast, in the eighteenth century, of schools and academies, like many of the neighbouring streets. During the period of the Irish Parliament one 'Thomas Crosbie, mathematician' in this street, hammered trigonometry, geometry, algebra, and high and low mathematics into the heads of his pupils, 'according to Cocker' and Euclid.

"Housed in No. 83, where the stranger in Dublin would scarcely think of finding it, is the 'Dublin Typographical Institute,' possessing some worthy descendants of Faust and Gutenberg, who can handle their 'sticks' with facility, and read bad 'copy' with the greatest ease—a task that often puzzles the writers themselves. Authors, sir, seldom acknowledge their indebtedness to the 'typos';

"They would not get the praise they often got,
Were it but known what they discreetly blot."

"For many years the lanes and courts out and about here have been the refuge of the working poor, struggling and broken-down tradesmen, jobbing mechanics, toiling and pallid-faced seamstresses, and of many more in different walks who, when they rise to eat their scant breakfast in the morning, know not where the price of their supper may be had for the night. Poor Scandinavia-street itself is in the last throes of galloping consumption, as you may plainly see for yourself. What little life that exists in her body will not circulate warmth enough through her frame. Her extremities are cold, very cold, and her pulse beats slower and slower and intermittent. The leeches have been on her long, but her blood within her is congealed, and will no longer flow. Touch them not—let the vampires perish upon the body they have long preyed upon. Should they perish before she is exhausted, means may still be taken to infuse new blood and life into poor trodden-down Scandinavia-street. Ah me, sir, I am old myself, and I can sympathise

with fallen fortunes, though I know and feel the folly of human regrets. With the poet, and thinking over my chequered life, I may repeat—

"Art is long, and time is fleeting;
And our hearts, though stout and brave,
Still, like muffled drums, are beating
Funeral marches to the grave."

Feeling that our cicerone was getting into a too reflective mood for further bustling through the busy thoroughfares of life, we left Scandinavia-street to the shades of night, and parted, as we always parted, with a warm shake hands with the "Oldest Inhabitant."

(To be continued.)

CELTIC OR KELTIC?

In a recent letter to the *Scotsman*, Professor Blackie says that according to the fixed traditional law of English orthoepy, Greek and Latin proper names commencing with K, or its equivalent C, when followed by a soft or slender vowel, are written with a C and pronounced like S. It is by virtue of this law that we say *Cicero* and *Cesar*, not *Kikero* and *Kesar*. It is therefore a wretched affectation of recent scholars, and directly contrary to the genius of the English language, when *Kelt* is written or spoken instead of *Celt*.

We are inclined to agree with the professor, whom we know to have a sincere love for the olden language of the Gael. Although some of our scholars of late years in Ireland have contracted the habit of pronouncing Kelt for Celt, our best writers and speakers of the old tongue not only adopt, but defend, the latter form.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

It is announced that the opening meeting and conversazione of this body will take place early this month, and will be held in the Royal Hibernian Academy, Lower Abbey-street. It is expected that the Lord Lieutenant will favour the architects with his presence on the occasion. Loans of drawings and objects suitable for exhibition, are sought for by the Council.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.

An Ordinary General Meeting was held on Thursday evening, the 27th ult., Mr. R. S. Swan in the chair. Members present:—W. Fennell, J. Briggs, C. Spadacinni, H. Keogh, A. W. Robinson, E. Clarke, W. Symes, C. J. Allen, J. Knox, J. Todd, D. J. Freeman, J. Longfield, W. O'Neill, T. H. Longfield, J. L. Robinson. The minutes of previous meeting were read and confirmed. A ballot was taken subsequently (Messrs. Symes and Clarke being scrutineers), and resulted in the election of Messrs. Browne, Carroll, and R. O'B. Smyth. The chairman then presented the prize to Mr. Fennell, and called on him to read his essay on "The Ancient Architecture of Ireland." Mr. Longfield proposed, and Mr. Briggs seconded, a vote of thanks to Mr. Fennell.

THE BELFAST ARCHITECTURAL ASSOCIATION.

The first meeting of the present session was held in the Museum, on Monday evening, 24th ult. There was a large attendance of members. Vere Foster, Esq., occupied the chair. The opening address was read by Mr. R. W. Watt, B.E., F.R.G.S., in which he referred to the prospects of the Association, and made some practical suggestions for its future management. A lengthier discussion followed, in which Dr. M'Corr and Messrs. Lockwood, Doubleday, Yo Stevenson, and Braddell took part. The chairman expressed in inspiring terms the benefits likely to accrue from the Association. We shall be happy at all times to record its proceedings.

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

In the last chapter of his treatise Semple confines his observations and devotes his ingenuity to the construction of coffer work applied to buildings to be executed in the sea, stone and lime beacons or lighthouses, stone pier heads, harbours of large magnitude, observations on the separate operations and united powers of winds and tides acting upon the heads of straight and curved piers; and lastly, "Concerning the Construction of a Harbour for the Downs, projecting to 20 feet at low water, the highest spring tides supposed not to exceed 20 feet more." It is worthy of notice to find that so far back as nearly a century and a-half since the practical sagacity of a Dublin architect was exercised on a "Plan for a Commodious Harbour in the Downs." The modern importance of Dover as a seaport town, and as the chief station for the arrival and departure of the continental mail service, was then unthought of. The splendid pier and harbour that Dover can boast of at present were projects hid in the future, and were scarcely more than the subject of dreams. Dover for centuries, of course, possessed a certain importance, from being one of the Cinque Ports; but it was not until late years that harbour works were commenced to render it a harbour of refuge suitable to shipping wants. "The Downs," we may remark, is that portion of the North Sea of the S.E. coast of England between the N. and S. Foreland, opposite Ramsgate and Deal. This roadstead affords valuable refuge for shipping, the Goodwin Sands serving as a breakwater. The large tract of "sands" which runs parallel to the coast for nine miles (the Downs lying between them and the mainland), are well known as the scene of many shipping disasters, countless ships having been wrecked upon them. Though ocean currents and the velocity of the waves have received since Semple's time considerable elucidation, the subject still needs careful study, in the interests of engineering. Semple makes some very sensible remarks, and submits diagrams showing the supposed action and force of the waves on the entrance piers to harbours, and on other points of works exposed to the action of the tides. After a careful review of all matters, he reduces into six heads his propositions in regard to coffers and coffer work for the buildings in water proposed.

COFFER WORK FOR BUILDINGS IN THE SEA.

"I. That sound heart red fir timber, kept constantly in water, will be extremely durable, and the iron cramps easily replaced if necessary.

"II. That these small stones, properly mixed with clean, sharp, sandy gravel, in water, exclusive of lime, and being closely and securely confined together, will instantly become firm and compact, and consequently be a substantial foundation for any building whatever.

"III. That stuffing hitherto recommended will most assuredly turn to a real petrification, and that each of these coffers will, in reasonable time, contain one compact substance, equal to the strength and durability of a hard and solid rock; which will be of the same shape of the clear of the coffers in which they were moulded, and will be possessed of this remarkable advantage, that the longer it stands the harder it will grow.

"IV. That these kinds of foundations in the weightiest work may (generally speaking) be effectively accomplished with surprising expedition, perhaps by an ordinary ship's crew, and at a trifling expense (in comparison with other methods) in any country throughout the greatest part of the universe, as there are probably but few countries that do not offer such common materials as are necessary for those purposes.

"V. That these kinds of coffers may be proportioned to any moderate depth of water, and that coffers of fifty feet high may in most respects be as readily constructed, and

the work as effectually executed in fresh water, or in a moderate tide river, as in any other lesser depth, the proportions being duly considered.

"VI. That in any kind of buildings that may hereby be erected in the sea, it may also be observable, that if the coffers were even made much slighter, yet, as they will be in a manner quite beneath the power of either wind or tide, they may be abundantly sufficient to oppose them both, and, consequently, they can only operate on the cut stone, which they cannot injure. I hope, therefore, that I may safely conclude that these are sure, quick, and cheap methods for completing such works, which are the three things that I have endeavoured to accomplish. With this view, therefore, and on these principles, I shall now venture to introduce this proposition into practice, by laying before you the plan for the Downs in England, which you may apply or vary according as other particular circumstances may require either in that place or elsewhere."

[As Semple's plan will be sufficiently understood by the professional reader from the description without the aid of a plate, we will allow our old architect to speak for himself:—]

PLAN FOR A HARBOUR IN THE DOWNS.

"A is the mouth in twenty feet deep of dead low water; B the basin for the largest ships, extending 1,856 feet, or about one-third of an English mile in the clear of the principal coffers as before, which in this or the like cases, dispose in the following manner:— Out of the 1,856 feet take the odd 56 feet, and divide them into two equal parts, and give one of those parts to enclose the thoroughfare at the rere of the lots; then divide the 1,800 feet into 18 equal parts, C, three of which (being 300 feet) are to be the depth of the lots on each side, and the remaining 1,200 feet are to be the breadth of C, which is the port or haven for trading vessels (which is just the breadth of the River Thames at Westminster Bridge); D is the port head at the Custom-house Quay, which must be six feet deep at dead low water; a and b are two small beacons, and c and d two quays 7,828 feet long and 7 feet broad each. E and F are twenty lots for docks, each lot 70 feet front and 300 feet deep. Then divide the 800 feet into three equal parts, of which you leave two on each side for the depth of these lots, and on each side of G and H, which represent the two principal quays, each of which will be 1,770 feet long and 100 feet broad. Whereon also note that E and F are thoroughfares to the rere, and 50 feet broad each, and G and H twenty-four lots for his Majesty's magazines, being 50 feet front and 200 feet deep each; I and K thoroughfares [passages between] of 40 feet broad; L and M thirty lots of 40 feet front, for public stores and weigh-houses; N and O thoroughfares [passages between the lots] of 30 feet broad; P and Q thirty lots for principal merchants' companies to store their imports and exports till further orders; R a yard wherein you are to make the coffers, &c., and afterwards it is to be the Custom-house Quay, extending 1,200 feet long and 300 feet deep; K, public stores and weigh-house on the ground floor, and Custom-house and Exchange on the second floor, &c."

[The above is Semple's description of his plan; and to anyone who knows how harbours are constructed, and the quays on either sides are apportioned, and the space divided or allotted for the shipping wants contingent, a notion may be formed of our architect's plan for a harbour in the Downs in the eighteenth century for general purposes. When Semple wrote, steam and its application on ocean or railway was in the womb of time, and London was, commercially speaking, in respect to distance, worse situated in being served through Dover than she is at present from almost any shipping port in Ireland. The site that Semple fixed upon, from a cursory view of the coast, led him to think that a little to the northward of Deal or somewhere about Walmer, would be the most suitable

spot for the construction of the harbour. The following extract will show how he was led to form the idea of projecting a harbour for the Downs in England:—]

"I have told you [the reader] that in June, 1752: I went to Ramsgate to consult Mr. Ettridge and Mr. Preston, who were pleased to favour me with a copy of their plan of their harbour. During my stay there with them and the captain that brought them the Portland stone, great part of our conversation turned on different opinions concerning a harbour for the Downs; and as I then had an opportunity of hearing many pertinent remarks on the subject, to satisfy my curiosity I took a cursory view of the shore thence to Dover, and I afterwards collected several other plans, charts, and other remarks, and on my return home employed one of my clerks to copy them, and reduce the whole into a concise little book, which now lies before me, and which I have many times studied with the greatest assiduity, in hopes of accomplishing what I most earnestly desired. And at length I completed what I am also now about to lay before you as the ultimate end of these propositions; but observe that all the materials which I collected were not by any means sufficient to determine me, especially as to the properest situation for it, because I had not any borings or correct soundings of high and low water. I must, therefore, leave these matters at your door, but shall give you a few necessary hints concerning the situation in the sequel."

[With another extract or two from our author in respect to the harbour in the Downs, and some closing remarks thereon, we shall take our leave of Semple's treatise on "Building in Water."]

(To be concluded in our next.)

RAILWAY MANAGEMENT.

THE annexed circular, addressed by Mr. Chichester Fortescue, the President of the Board of Trade, to the chairmen of the different railway companies, although it has reached the public already through the daily Press, is of sufficient importance to give it extended publicity. The circular of the President of the Board of Trade is framed on the information given by Captain Tyler in his official report to the Board. The number of terrible railway accidents that have occurred lately show plainly the insufficient security for life and limbs that exists upon our railway lines from bad and reprehensible management. The unpunctuality of the various trains is occasioned by the cheese-paring policy of the directors, who, sooner than forego their usual dividends, overwork their staff, entailing double time on various hands, who, in consequence, break down, from the amount of harassing labour thrust upon them. Signal men, pointsmen, guards, drivers, stokers, and others are often employed from 14 to 18 hours out of the 24. Signal men and pointsmen, at least on many lines, have often been known to fall asleep from their long hours, anxious and exhausting form of labour. Getting no dinner time and being unrelieved for several hours of the day and night, their system gives way, and with sleep comes the terrible collision and loss of life, attributable more, in our opinion, to the criminal neglect of the directors than to the unfortunate individuals who dropped into sleep, exhausted at their posts. The circular says:—

"Her Majesty's Government desire to call the earnest attention of the railway companies to the enclosed report made to the Board of Trade upon the accidents which occurred on the railways of the United Kingdom in the year 1872, exhibiting as it does a state of things which, it is believed, has been not only continued but aggravated during the present year. It appears from the report that a large proportion of these casualties are due to causes which are within the control of the railway companies. If it may be contended that the traffic on many lines has very greatly increased, and with it the risks of railway travelling, it is no less true that it is within the power of the companies to take care that the permanent way, the rolling stock, and the

station and siding accommodation are kept up to the requirements of the traffic; that the officers and servants are sufficient in number and quality for the work to be done, and that proper regulations for their guidance are not only made, but enforced; that pains are taken to test every reasonable invention and expedient devised for the purpose of preventing danger; and that such of those expedients as experience proves to be effective are adopted without undue delay. In the face of the facts collected and analysed by Captain Tyler, and of the numerous accidents of the present year—many of them the subject of Board of Trade inquiries—it is difficult to suppose that such is the case. There can, indeed, be no doubt that methods of working and mechanical contrivances, the value of which has been thoroughly ascertained, have been too slowly introduced; and there is great reason to believe that sufficient provision has not been made for the safe working of the increased traffic by the enlargement or re-arrangement of stations and sidings, and the laying down of additional lines of rail. But whatever may be thought of these or other causes as contributing to the result, the present insecurity of railway travelling imposes upon the railway companies the grave responsibility of finding appropriate remedies for so great an evil. In these observations I do not attempt to distinguish between the various companies, to all of which they do not in an equal degree apply. Another subject which urgently requires attention is the frequent unpunctuality of passenger trains. The inconvenience, vexation, and loss caused to passengers by this breach of the conditions upon which the companies profess to carry them, constitute in themselves a serious subject of complaint. But the evil arising from unpunctuality does not end here. The service of the line is disarranged: the chances of accident are multiplied; and trains are forced, in order to make up for lost time, to travel at excessive speed through complicated stations, or under other circumstances where such travelling may be equally dangerous. The returns made by the companies to the Board of Trade, under a recent Act, of the accidents which happen to railway servants, show a lamentable number of casualties, often fatal, in proportion to the numbers employed. It is, no doubt, true that many of these accidents are due to the negligence and rashness of the men themselves, and to the hazardous nature of their duties. But, at the same time, it is to be feared that the danger of their work is not unfrequently increased by the want of proper accommodation and appliances, or of suitable means of precaution or protection; while sufficient pains do not appear to be taken to enforce upon them the observance of the regulations made for their safety. The companies will feel the necessity of seriously considering the means of preventing so great a loss of life. Her Majesty's Government are fully sensible of the difficulties incidental to railway working in a country where the traffic is so great and so various, as well as of the efforts which have been made by the railway companies, in many respects with remarkable success, for the accommodation of the public; but safety for life and limb, which ought to be a paramount object, has, nevertheless, not been sufficiently secured, and great and increasing dissatisfaction is the result. Her Majesty's Government, therefore, reserving their own liberty to consider at any time the expediency of legislation upon any part of this important subject, have deemed it their duty to call the attention of the railway companies to the whole question, in the hope that they, in whose hands the means of improvement mainly rest, will themselves make every effort to meet the reasonable demands of the public and of Parliament."

THE CITY OF LONDON ARCHITECT.

At a Court of Common Council the Officers' and Clerks' Committee reported upon a letter of Mr. Horace Jones, architect and surveyor, on the subject of remuneration for the performance of certain extra professional services. They said:—

"We whose names are herewith subscribed of your committee in relation to officers and clerks, to whom on the 26th day of June last was referred back for reconsideration our report then considered on the reference of the 29th day of June, 1871, upon the letter of Mr. Horace Jones, architect and surveyor, on the subject of remuneration for the performance of certain extra professional services, and recommending that in consideration of the special services of the architect and surveyor the sum of £5,000 be paid to him, and that from Lady-day last he be paid a salary of £2,250 per annum in full for the discharge of all duties that may hereafter be required of the architect and surveyor, do certify that we, in the first instance, requested the architect and surveyor to prepare and lay before us a return of all sums of money received by him as

architect and surveyor since his appointment beyond the salary attached to his office, and that he further specify what proportion of the amount was for his personal remuneration, and what for expenses incurred, and the nature of them. From this return it may be stated shortly that the sum total of all moneys, exclusive of ordinary salary, received officially by the architect and surveyor from all sources since his appointment in 1864 amounts to £51,132 14s. 11d., and that this amount is thus subdivided, viz.:—1. Receipts for old materials, plans on leases, &c., paid into the chamber, £38,530 0s. 2d.; 2. Receipts for reimbursement of payments for awards, draughtsmen, clerks of works, and miscellaneous expenses, £11,946 4s. 9d.; 3. Receipts for special services extending over nine years, and being the only moneys carried to his personal credit, £656 10s. We next referred this return, and the reconsideration of our former report, to the sub-committee, and having considered the reference, and also the return of the architect and surveyor, they have brought up to us their unanimous opinion and recommendation that the architect and surveyor should be paid the sum of £5,000 for his extra services in connection with the completed works referred to in the former report. In reporting upon the question to this court we consider that the return now furnished, taken in connection with the circumstances fully detailed in our former report, exhausts the facts of the case, and avoiding, therefore, a repetition thereof, we beg respectfully to state that, after having carefully reviewed our former report, we agree in the opinion of our sub-committee; and as referring to the special services actually rendered up to this time by the architect and surveyor, we recommend that he should be paid the sum of £5,000 for his extra services in connection with the completed works referred to in our former report."

The report was carried, with the proviso that it should be understood that the £5,000 recommended to be paid to the architect was as a gratuity.

ASPHALT: ITS NATURE AND USES.*

(Continued from page 306.)

As Portland cement has entirely supplanted asphalt in all architectural and hydraulic works, it is unnecessary to dwell upon the very slight part which the Seyssel asphalt has had to play in such undertakings. It was never in any degree considerably used; the great consumption of asphalt has been for pavements and terraces over low structures or cellars.

M. Leon Malo, an engineer to whom I have before referred, has truly said that until asphalt came into use it was idle to talk of footways. The passenger-way beside the houses was generally paved with the small sharp stones which appeared useless for the carriage-road; or in places where flags of slaty rock could be obtained, these were put together in an irregular and uneven manner. Asphalt, which came to smooth away all these inequalities, has therefore been a real boon to cities; and no one need be surprised that on its introduction in 1837 it received the heartiest reception of the inhabitants of the towns, and was used in the most extensive way.

The mode in which the asphalt pavement is laid has remained very much the same from the first, but, instructed by experience, greater care has been exercised in laying the substratum upon which the asphalt is spread, as well as in the fusion of the composition itself. By the kindness of the *Paris Compagnie Générale des Asphaltes*, the author is enabled to describe the present process adopted by that body in the fullest way.

As to the preparation of the foundation, asphalt is only laid upon such a bed as is free from any inequality where water might accumulate. It has often been attempted to lay the asphalt direct upon a sand foundation, or upon flags and slabs, but this has nowhere succeeded, a much quicker deterioration always taking place by the starting of the subway. A foundation of *béton* has been found the best. It is desirable that this should be even in all ways, in order to receive a uniform coating of asphalt, by which the duration of the pavement is prolonged and the expense decreased. The asphalt can only be poured

on to the *béton* when the latter is perfectly dry, or the superfluous moisture of the mortar evaporates and causes holes and bubbles in the pavement; the firmness of the *béton* is also endangered if it be covered too soon. Of course, in order to hasten the consolidation of the *béton*, hydraulic lime or cement is used. The mastic is brought from the factories in round cakes weighing 25 kilogrammes. These are broken up into pieces of the size of road stones, and are melted down in the cauldrons, the whole mass being distributed in three equal portions. A small quantity of bitumen is first melted in the cauldrons, being half of the entire mass to be used, weighing five or six per cent. of the weight of the mastic. A fourth part of this is set aside for finishing, in case the broth becomes too dry during the operation. The fire is kept at a uniform heat, so that the temperature is always over 150 deg. Celsius and under the 170 deg. Celsius. When the whole of the mastic is melted and easily stirred, the molten mass in the cauldron is covered with half of the coarse sand to be used, in quantity 60 per cent. An interval now takes place, in which the heat is continued, but the stirring is suspended, until the sand begins to sink by its own weight, and the black liquid is seen here and there on the surface.

This caution is very necessary, in order that the sand may be dried and so far warmed that it should not cool the under part of the asphalt broth. The second part of the sand is added in a similar way. On the addition of this second part it will be seen whether the mixture is sufficiently prepared, and whether it is requisite to add the whole or any portion of the bitumen which had been set aside. On the composition appearing equal and perfect, and the heat we have named above has again been reached, which is practically ascertained by squirting a few drops of water on the surface and observing whether they evaporate again with crepitation, and that the stirrer on being inserted can be easily removed without any clinging to it, it may be at once applied.

Should the stirrer not go into the mixture easily, some bitumen must be added, the stirring being continued during the time: an interval should here be allowed to elapse until the temperature is regained. During the process of lading out the mass must be occasionally stirred, in order that the sand may not sink to the bottom. The spreading of the mastic is effected by means of a wooden trowel of a peculiar shape, which is heated to a great heat in order that the asphalt may not cling to it. The asphalt is poured from great ladders on the places where a junction is to be made, to bind the edges together and cause a constant adherence. Without this precaution the various strips of melted matter will weld in an imperfect manner. In order to produce all the conditions of solidity and durability, the spreading of the mass must be effected by swift pressure. The use of this spatula is not easy, and requires considerable practice on the part of the workman.

In most cases the sand-layer subsequently put down, unfortunately for the general effect of the process, is limited to a mere sprinkling of the surface with sand. The object of this operation is not only, as many seem to think, for the production of a rough surface, but to give the uppermost stratum of the asphalt its necessary amount of sand. The sand usually sinks, in consequence of its specific gravity, so far into the mastic, and the purer mastic rises to the top. It is to fill this upper layer that the sand is introduced, for without it the sun would act upon the upper layer, and, by softening it, cause rapid disintegration. The workman, therefore, should spread plenty of sand upon the stratum, fully to dry the mass, and a uniform amount of pressure should be applied during this operation, thus incorporating it with the whole mass. The thickness of pavement in Paris is usually about 15 centimetres. In 46 kilogrammes of mastic it is calculated there should be 8 kilogrammes of bitumen, and 80

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.

kilogrammes of washed, sieved, and dried sand or gravel.

At one time asphalt mixture, to prevent its cooling before use, was melted at the place where the pavement was to be made or repaired, in cauldrons with special furnaces. But many persons are annoyed by the smell of the asphalt, although to as many others the odour is agreeable, and in any case the assemblage of a large mass of material, and the boiling in the streets, would materially interfere with traffic. Therefore, at the present time, in some places, and especially in Paris, where it has been rendered obligatory, another method has been adopted. The asphalt is melted down in the factories, and transported to the scene of action on wheeled carriages.

The absolute duration of a well laid asphalt pavement is not yet known. Several are known, laid some thirty years after the beginning of the century, which have not lost more than the thickness of cardboard during the time. Such well preserved pavements of that early epoch are to be found in the Place des Célestins, the Place des Terreaux, and the Quai de l'Hopital at Lyons; but as a general rule the duration of a pavement of fifteen to twenty centimetres may safely be estimated at from twenty to twenty-five years.

The great advantages of this pavement, its evenness without slipperiness, its relative softness to the foot, combined with great resisting power, its impermeability to water, by which the foundation walls of the adjacent houses, and their kitchens and cellars, are fully protected, and the absence of joints, must be evident to everyone acquainted with the old paving.

(To be continued.)

BOOKS RECEIVED.

Reports to the Board of Public Works on the Construction and Working of the Barrages on the Seine, Marne, and Yonne, and their Applicability to the Circumstances of the River Shannon, &c. Dublin: Alexander Thom. 1873.

THESE are two excellent reports, the first by Mr. William Forsyth, the Chief Engineer to the Board of Public Works, and the second by Mr. Robert Manning, M. Inst. C.E. The body of valuable information embraced in these reports had its inception in the instructions of the Board of Works to their engineer, comprised under the three following heads:

First—A practical acquaintance with the construction and working of the barrages on the Rivers Seine and Marne.

Second—To ascertain their applicability to the circumstances of the Shannon, and the regulating of its flood water.

Third—The amount of cost relatively to that of the more ordinary forms of flood-gate.

The instructions have been carried out in a practical manner by personal visits and observations. The different systems adopted and being adopted, in France are discussed *seriatim*, and their advantages and defects, where existing, pointed out.

Mr. Forsyth describes the Barrage-à-Fermettes, the Barrage à hausses Mobiles, the Barrage-à-hausses Tambour, and the new system by M. Krantz now being perfected. After giving a technical description of the mechanism of the above systems, and comparing the circumstances of the Seine and Marne, and their physical features, Mr. Forsyth proceeds to detail with great exactness the circumstances of the Shannon, and the application of the system discussed to that river. The placing and removing the Barrage-à-Fermettes occupies a considerable time, being a work of much labour, and requiring much skill; there is also great risk in attending their working at times of flood. Their defects led to the improvements contained in the Barrages-à-hausses Mobiles. This latter is even more complex than the former, from its many parts, which are intricate as well as numerous. In the opinion of Mr. Forsyth, the Tambour Barrage (the third system described) is inapplicable to the

navigable pass; and in those places where it has been applied the navigable pass is furnished with Barrage-à-Hausses Mobiles. The new barrage invented by M. Krantz, the engineer-in-chief of the Lower Seine, is to possess the following properties:—1. To be moved by the natural force of the water-course, without exposing the attendants to risk. 2. To remain in subjection to the will of the attendant. 3. To correct spontaneously the small variation in the upper bay. 4. To be capable of resisting violent shocks. 5. Not to require for its fixing any works except those usually executed on our rivers. 6. To be sufficiently staunch. 7. To be capable of being applied to greater heights than those hitherto obtained by moveable barrages. These conditions are believed to be attainable.

"The River Shannon," says Mr. Forsyth, "being to a great extent a succession of lakes with reaches of river course of more or less extent connecting them, the floods do not rise so rapidly; and the sectional area of the connecting river channels being much greater in proportion to the discharge than that of the channel of the Seine, their rise is comparatively small." "There is another peculiarity in the winter floods of the Seine. Immense quantities of floating ice are carried down from the upper country on the breaking up of the ice when the thaw sets in. Ice floods in the Shannon are of rare occurrence, and of small importance. It will be readily understood that when these ice floods occur in the Seine that it is of much importance that there should be a large portion of the barrages lying down so close on the bed of the river that the ice may have a clear passage of escape over them without their sustaining much injury. The barrages must also be of such a construction that they can be lowered with much celerity on the rapid rising of an ice flood, to prevent any extensive and destructive injuries to the structures themselves."

Mr. Forsyth goes on drawing attention to other important features in connection with both rivers. "The entire works on the Seine and Marne rivers have had reference to the improvement of the navigation, and no works having the drainage of the land as their special object have been carried into execution. The system which has been adopted in the improvement of the navigation differs very materially from that which has been practised in the United Kingdom. Here level reaches, or nearly level, have been formed by excavation without material change in the level of the summer water; there the amount of excavation has been very small, and the level reaches, or reaches with a small declivity, have been formed by damming up to summer water by the barrages."

Though from the special circumstances of the Seine and the Marne the system of barrages adopted may be applicable, they are not, in the opinion of Mr. Forsyth, suitable to the condition of the Shannon. He discusses the subject very clearly, and gives good reasons for showing why they are not so well adapted. For regulating the flood waters of the Shannon some sluices of ordinary construction are, in the opinion of Mr. Forsyth, preferable to the Barrages-à-Hausses Mobile. The question of cost is also entered into, in comparison with the ordinary form of flood-gates. We have marked some passages for quotation, which we have not space for at present; but we will return to the subject again, on which occasion we will also notice the report of Mr. Manning, which contains many particulars well worthy of attention in this country.

Appended to the reports are diagrams or sketches of the forms of barrages described, and at present in use on the Rivers Seine, Marne, and Yonne.

Euson's Almanack and Companion for Ireland, for the Year 1874. Dublin: W. H. Smith & Son. London: Simpkin, Marshall, & Co.

THIS almanack is a first issue, and is commendable in its design, but imperfect in its

arrangement and information. It contains a vast deal of matter on a variety of subjects in addition to what is usually contained in some of our best almanacks, and to some extent it supplies the place of Thom's. Among other matters will be found a list of the corporate towns and cities of Ireland, with their populations, and some remarks on the present condition of their trade and manufactures; lists of fairs and markets, and gardening operations for each month in the year. Information will be found connected with all the educational, law, church, literary, art, and scientific societies, their meetings and officers, and the postal and parliamentary departments. This Almanack and Companion will be found a very useful reference, and it will supply nearly all the common wants of commercial and business men, as well as the general public. We could point out several errors; but as the compiler "asks consideration for some observable defects, which he hopes another year will see corrected," we will not act the part of hypercritics.

This much we may say, however, that the Almanack and Companion is a creditable attempt; and if several matters of no import are eliminated in next year's issue, and their place supplied with more useful information, this Almanack will put in a strong claim for support from the Irish public. The emblematical wrapper, with the arms of the chief towns and cities, is tastefully got up, and the paper and printing, minus the errors, is respectable.

The Journal of the Royal Historical and Archaeological Association of Ireland. No. 15, July, 1873.

In this part is continued the interesting "Memoir of Gabriel Beranger, and his Labours in the Cause of Irish Art, Literature, and Antiquities, from 1760 to 1780," by Sir W. R. Wilde. We are told in a note that the time of the writer of the memoir has been so much occupied with the compilation of the Census, that he was unable sooner to resume the continuation of these most valuable records. "A Trip to Glendalough, County Wicklow" forms the topic of the present instalment of the memoir. There are papers also by Mr. R. R. Brash and Mr. W. F. Wakeman. The journal is well printed.

SANITARY AND OTHER NOTES.

THE want of suitable accommodation for the removal of the sick to hospital is a matter that cannot bear to be much longer delayed. Its urgent necessity has been again brought before the Corporation by the Sanitary Association. The milk adulterators, in a few instances, have been heavily fined, but imprisonment as well as fine would be the proper mode of dealing with the rascals. The following cases will show the extent of the evil:—James Smith, Tighe-street, was fined £12 for selling milk adulterated with 50 per cent. of water. Patrick M'Nally, of the same street, 50 per cent. of water; fined £8, his milk on previous occasions always being found pure. J. Sheridan, Barrack-street, 45 per cent. of water; had no cows of his own; fined £10. Patrick Rooney, Barrack-street, 40 per cent. of water; no cows of his own; fined £8. Terence Smith, Barrack-street, 90 per cent. of water; £15, the maximum penalty that could be imposed being £20. A proposition came up in the Corporation in the matter of planting Sackville-street with trees. Like other matters of more or less consequence, it was referred to No. 1 Committee, to crop up again next year, and to be referred back again.

BRAY.—The election of a Town Clerk brought a stiff competition. No less than twenty candidates sent in testimonials. Some of the applicants were no more fitted for the post than Peter the Hermit, were he alive. They numbered amongst them several retired military officers, a master of arts, and a poet, whose application was couched in classical language, and adorned with classical allusions. One of the military applicants stated that he had been all through the Indian mutiny and the Crimean war. Several of the applicants had filled town clerkships, and one had been a bank manager. The salary was £120 per annum, the clerk elected to devote his entire time to the work of the office. All candidates present were called before the board. On the first ballot the names of Mr. Dempsey,

manager of the International Hotel; and Mr. Brownrigg, late sub-inspector in Jamaica, stood highest. The hotel manager was finally elected for the duty, which we hope he will find congenial to his taste.

KINGSTOWN.—The conflict that has existed for several months between a section of the ratepayers and the commissioners in regard to the sewerage bill has come to an end. The project is abandoned, as it is now proposed to perfect the sewerage under the provisions of the Local Government Act. We might say much on the pros and cons of the late measure, but shall forbear. It is to be hoped in future each section in the board will unite in carrying out the sanitary wants of the township.

DROGHEDA.—The following is reported in the local journal in re obstructing the thoroughfare:—Sub-constable M'Intire summoned Catherine Byrne for obstructing the thoroughfare by placing a herring barrel outside her door. Defendant—Sure yiz all know, gintlemin, that this is the only way I have of living, and Mr. Garvey there will tell yiz that this little barrel causes no instruction at all. Mr. Whitworth—This poor woman is brought up here for occupying one foot of the pathway, whilst other people in greater thoroughfares are permitted to block up the whole front of their establishments. This certainly is not fair, and I would be against making these poor people suffer whilst others are allowed to go free. Head-constable Burke—We got special orders about these people. Of course if it is made general the police would carry it out. The Bench were unanimous in making the order. Mrs. Byrne was then fined 1d. and costs.

NEWRY.—Arthur M'Couville was summoned for having permitted a nuisance to exist on his premises, Church-street. On being previously charged with the offence, he represented to the town inspector that he had abated the nuisance. In the dwelling were subsequently found domesticated two pigs, a donkey, and a goat! Fined 5s. and costs.

THE FAMILY TIE MAINTAINED.

We stop press to announce that no less than *fifty-five* out of the sixty representing (?) the interests of our overtaxed and wonderfully patient citizens, assembled at Cork-hill this day. Need we say that an appointment was to be made?—foolish remark! The appointment of "Gas Inspector and Verifier of the City Darkness!" was to be made. We must refrain from further remarks—the affair is only another episode in the system of jobbery so often condemned in our columns.

CORRESPONDENCE.

THE REMAINS IN ST. MICHAN'S VAULTS, DUBLIN.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—“What is Adipocere?” in your last, has given some interesting information, which is possibly new to many. The circumstances attendant upon the formation of this matter, as described by Fourcroy, from observations during the removal of the enormous mass of human remains from Le Cimetière des Innocents at Paris, are so totally dissimilar to the preservation of dead bodies in the vault of St. Michan's Church, Dublin, as to lead to very opposite conclusions; and possibly the author of this paper may be under misconception in giving the opinion of a medical man, stating the latter are adipocere.

Like all other things resulting from natural laws, chemical changes such as this are unerring. Adipocere could be no more formed in the absorbent atmosphere of St. Michan's vaults than a mummy can be produced by interring a dead body in moist earth.

Very many years ago, being fond of peering into out-of-the-way nooks and corners, I visited a vault in the graveyard of St. Thomas's Church, Dublin. An exceedingly damp atmosphere pervaded it; miniature stalactites hung from its arch, and stalagmite was forming upon its floor, which, (as well as its walls), I remember was reeking with moisture. Opposite the entrance, in the farthest part of the vault, lay the remains of

a departed fellow-being, where it had been for some thirty years. The coffin was rotting and falling away piece-meal, shewing the skeleton a hideous mass enveloped in a gelatinous-looking covering, a black cheesy-like substance, forming a continuous seamless shroud over the fleshless bones; and although unusual to find it in isolated interments, this was adipocere: but it must long since have crumbled away, as, from the opinions of Fourcroy and Thouret, it is asserted that this fatty matter is only capable of enduring from 30 to 40 years, when it becomes a friable mass, easily pulverised, and after a longer period disappearing altogether. This has been ascertained by their examination of the older interments in Le Cimetière des Innocents. How unlike this to anything to be seen in St. Michan's vaults!

ONE OF YOUR CONTRIBUTORS.

PROGRESS IN BAGNALSTOWN.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I, an “occasional” correspondent, deem it my duty to let you know what progress we are making in this locality, and whether we are keeping pace with the times or not. In the matter of sanitary reform, I think we may vie with any other town of similar dimensions in the kingdom. Bagnalstown is most healthily situated on the River Barrow—not in a hole, as other places are, but on a sloping declivity, resting on a limestone gravel formation. There are several benefactors of trade here. The first I will mention are the Messrs. Ward, Mr. Norton, &c. I would hope shortly to see their fine establishments converted into factories instead of “making malt” of a grain which never was intended by the Creator for other than food for man. Of street architecture, I have to draw your attention to the elegant shop-front of the Messrs. Kehoe, Brothers, said to be after the plans and elevations of a celebrated West-end house. These gentlemen are universally held in esteem by their kindness and generosity, and deserve well of their customers. There are several vying with each other in ornamenting and rearranging their establishments, and of whom I may merely glance at and name—Mr. McGrath, Mr. Kennedy, Mr. T. Brady, &c. It is gratifying to find a spirit of progress aroused amongst us, and not the old system of “leaving well enough alone”—exploded for ever. Cahir, in Tipperary, and Ballinrobe, in Mayo, are the only other two places in Ireland that can (in my opinion) cope with Bagnalstown in these respects. Hoping I have not wearied you with the above details, C.E.

Bagnalstown, 26th November, 1873.

MICHAEL BANIM.

We regret to hear that ill health compels Mr. Banim to resign his official appointment as Postmaster of Kilkenny. Advanced years is another consideration, and the joint author of “Tales by the O'Hara Family” has arrived at that period of life that needs repose. We thoroughly agree with all that has been said in his behalf by our contemporary, the *Kilkenny Moderator*, and we trust that the Government may be induced to grant a respectable retiring allowance. Michael Banim has survived his remarkable brother, John, upwards of thirty years; and not only as a novelist but as a poet, John Banim is entitled to a lasting remembrance on the part of his countrymen. What holds good in respect to John holds also, with little difference, in respect to Michael; and it would be an act of unpardonable neglect if his latter days were not made comfortable by the action of his countrymen, in addition to whatever the Government may grant. No one can, we think, dispute the justness of the following words, extracted from our contemporary's notice:—

“Michael Banim has claims on the consideration of the public and of the State such as few living men have. The surviving member of ‘The O'Hara

Family’ must share to the fullest degree the literary distinction which his deceased brother enjoyed. Michael Banim's contributions to the O'Hara Tales are amongst the very best, and if they were a few less in number than those of John, the disparity in that respect has been made up for since the death of the latter by the tales which Michael has given to the public on his own account—‘Clough Flon’ and ‘The Town of the Cascades,’ both of which fully equal in power his first contribution to Irish national fiction, the first, in quality as in point of age, of ‘sensation’ novels, ‘Crohoore of the Bill-hook.’ It would indeed be a national disgrace were Michael Banim allowed, in the winter of his days, to pine in actual poverty, such as must ensue on the necessary retirement from his present office, if the proper authorities of the department do not award him a suitable retiring allowance.”

The Town-hall or streets of Kilkenny should exhibit in the future some memorial of the “Brothers Banim.”

We have just learned that a meeting of the citizens of Kilkenny has been called to make arrangements to present Mr. Banim with some substantial token of the esteem in which he is held by his countrymen. We heartily concur with our contemporary from whom we have already quoted, that “the movement ought truly to be a national one, for the literary fame of ‘The O'Hara Family’ is not confined to the representation of a city or district, but redounds to the credit of Ireland at large.” Mr. Banim retires on Monday (this day), and is succeeded in the postmastership by Mr. John Gosling, who has filled the office of chief clerk for nearly thirty years. This is as it should be—a worthy official promoted.

OUR DIRTY CITY, AND ITS RULERS.

THERE is no city in the British Islands that possesses more facilities for carrying out improvements and promoting cleanliness and public health than Dublin; yet, from the conscious criminal neglect of our local rulers, it remains a disgrace to the kingdom and corporate rule. Convenient to a fair tidal river, which runs through the centre of the capital, and within a short distance of the sea, with an admirable water power and valleys and hills around that are seldom capped with mist,—with all these auxiliaries to health, ills are epidemic, and dirt seems to be our heritage. Why is it so? or why should it be so? It is so because our Corporators are speculating gamblers, gambling direct and indirect with the public money raised by taxation—taxation which in some instances amounts to positive extortion. Year by year, and season after season, a well-known clique in our Council employ their time and energies to the promotion of schemes in which they are interested as directors or shareholders, or which they otherwise receive a commission for promoting by exercising their influence in the body to which they are elected, not to serve their own, but the public interest. One time it is a railway scheme, then a gas scheme, a sewage scheme, or a utilization scheme for waste substances and undeveloped resources. Special meetings are called, and cut-and-dry resolutions are proposed and carried at a meeting composed of about half the members. The lawyers are empowered to proceed, the bills or schemes being in the meantime draughted by the hungry, hanging-on lawyers, the seal of the Corporation is affixed, and the witnesses are hunted up to give their evidence on a parliamentary committee. A rare lot are those witnesses that are sometimes called in the interest of the Corporation and their friends across the channel. Some of them may be found hanging about Westminster in doleful dumps at stated periods of the year, when no bills are before the house. Some are dubbed engineers, others captains, others ex-M.P.s. secretaries of half a dozen defunct companies, which began in a fraud and ended in a swindle.

The Grand Trunk Railway—that was begun in a flourish, and which was to dive

under the Liffey at the North Wall, and come up with a beautiful easy gradient at Ringsend—lives green in the public memory, from the fact that a bit of a shaft was commenced which was supposed to absorb some hundreds of pounds for work, but the said hundreds of pounds went into the pockets of the promoters. The Grand Trunk Railway died the death of the unjust, and the jobbers in our Corporation who helped the swindle to exist are now as silent about its collapse as the dead in Bully's Acre. The solicitors and lawyers and other legal agents are living still. We don't blame them for getting paid for their work. But what has become of some of the witnesses? Some of them are walking the streets of London with hardly as much rags on their backs as would do for a scarecrow. They are living on their wits from hand to mouth; and when the next Corporate measure comes on for a hearing before the house, they will be probably hunted up and rigged out with a brand-new suit of "shoddy." And won't they give their evidence in style on the value of central stations in Dublin, and the gas-producing profit of corporate management? To support such a continuous system of fraud the public money is wasted year after year, and this is how we have a dirty city.

Government auditors may prevent frauds, but there are certain schemes in which they are powerless to prevent the fraudulent expenditure of the public funds. Even if all law expenses were subject to be sharply taxed, the sharpers could drive a trade, and laugh at blindfolded Justice. Bill and scheme promotion in this city is at present rife, and there are other projects hatching which will show before long a heavy bill in the Borough balance-sheet—"incidental expenses" and "sundries" absorbing no small amount.

The river is foul, the streets are filthy, the homes of the poor are fever-ridden; but for sanitary measures there are no funds, because the Acts, forsooth! are defective, and the Corporation need to be empowered to increase the taxation. Most wise and prudent Councillors, most admirable and energetic Chairmen of Committees—how can we praise you enough for your disinterested labour and loss of time, given without a hope of reward, in the service of our citizens! How foolish to waste your precious time and rob your families for the promotion of that myth, yclept the public good! Is it the honour of the thing or the profit of the situation that makes you all so anxious to serve the common weal, or pure and simple benevolence? We know you will not answer. What right has any critic to challenge your high and lofty aims, as high as the pillar towers, and deep as the holy wells. "Home Rule" is a valuable privilege when properly exercised; but has it not many applications, and would it not be well that some of these applications were made patent in this dirty city? Softly, we forget. Civic rule is home rule, and is not home rule in dirt painfully conspicuous and omnipotent in our midst? Of dirt, has not Dublin "lashins and lavings?" Do not our people live in it, feed on it, drink of it? Do not our streets and lanes swim with it, and our homes float over it, and, having had a surfeit of it for the last thirty years of Corporate Reform rule, are not the people a *little* tired of it, and desirous of a change? We should think so. In the days of the old Corporation the members thereof mostly resided in the city, over their counting-houses; but now our most indigent member apes a country house or suburban villa. His few business hours are only passed amidst the odours of the capital, the rail or tram bringing him home to his amiable wife and children. He does not feel his health undermined by constant residence; and as no one feels the shoe but those it pinches, he forgets, like his brethren in council, that the working poor of the city are day and night, from year's end to year's end, chained, as it were, within their small and unhealthy tenements.

There is no Rathgar, Rathfarnham, Milltown, Kingstown, Bray, Clontarf, or Dundrum for the dwellers on the Coombe or

Liberties, or the pallid residents in the crowded back slums extending from Mary's-abbey to Stoneybatter. These may work and sicken, and starve, and die—die more for the lack of fresh air than food, for aught the majority of the jobbers in our Corporation may care. The representatives of the people! What a glorious representation! The arms of the city has more than once changed its heraldry: would it not be meet that another change should be made, and Death's head and cross bones be substituted for the present armorial bearings? Such a change would be more consonant with the purpose and rule of the Corporation at present.

The pretence to activity by the prosecution of a number of individuals for breaches of the sanitary laws offers a poor contrast to the system upheld for years in this city by the prosecutors themselves. Seething depôts of filth have been retained in different parts of the city by the latter, and the poor have been prosecuted (sometimes very justly) for following the example set to them.

It is time that the eyes of the public should be opened to the trickery of our Corporation in the matter of our public health; and for our part we shall take care that they shall be kept open until corporate criminal mismanagement and neglect shall be visited with the condign punishment and shame it merits.

CORPORATE APPOINTMENTS AND THE GAS QUESTION.

THE following correspondence has been forwarded to us for publication. It deserves that degree of attention which the interests involved demand, but which we fear it will not get while the present régime lasts on Cork-hill:—

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The interest you take in the proper settlement of the Gas Question will plead my excuse for intruding on your notice the enclosed copy of a letter sent by me to the Lord Mayor, relative to the coming appointment of a gas meter tester and verifier; and I beg to assure you that, beyond the interest which as gas consumers or rate-payers we might naturally take in it, neither I nor any of my friends care who may be appointed to fill the situation.—

I am, sir, your obedient servant,

JAMES KIRBY.

41 Cuffe-street, Dublin.

To the Right Hon. James William Mackey,
Lord Mayor of the City of Dublin.

Dublin, 41, Cuffe-street,
20th November, 1873.

MY LORD MAYOR,—I have the honour of enclosing to your lordship the IRISH BUILDER of 1st October, in which, at page 269, appears a report of my correspondence with the Board of Trade on the gas question. The letter I addressed to the Town Clerk (a copy of which forms a portion of that correspondence) was one of the numerous letters which appeared in the columns of one or other of our daily newspapers at the close of last year and the commencement of the present, complaining of bad light or erroneous gas meters, all of which were treated with profound silence. In no other city in the empire having an official paid for verifying the gas meters used and for testing the illuminating power of the gas burned therein, would be found complaints made so loud, continuous, and general. In one of those letters, published in the *Irish Times*, 23rd December, 1872, the Corporation verifier of gas meters was one of the persons invited to give contradiction to the public impeachment of the gas meters in use in Dublin and its suburbs.

As a general rule, every important city and town in England or Scotland has two or more factories employed in making or repairing gas meters, and into many of these places gas meters are largely imported—Manchester, for instance. In Dublin one gas meter factory has had the monopoly of its trade for the past nine years, and I am not aware of another city or town in the United Kingdom being so situated in that particular. It is an undeniable fact that the history of gas lighting does not furnish another instance of the public impeachment of gas meters remaining uncontradicted for a period of now thirteen months.

Under these circumstances I respectfully submit

that your lordship and the members of the Town Council would act prudently in rejecting any candidate for the office of verifier of gas meters, &c., in Dublin who may be connected by ties of kindred with any official in either the Gas Meter or the Alliance and Consumers' Gas Companies' service, and so win back public confidence in the gas meter testing department.—I have the honour to be, my Lord Mayor, your lordship's obedient servant,

JAMES KIRBY.

HOME AND FOREIGN NOTES.

EMIGRATION.—The Registrar-General has furnished a return of the number of emigrants—natives of Ireland—who left Irish ports during the first ten months of the years 1872 and 1873. From this it appears that the total during the first ten months of 1873 was 85,287 (48,798 males and 36,489 females) against 71,610 (42,054 males and 29,556 females) in 1872. The increase was pretty fairly distributed over the twelve months, with the exception of January and February, both of which showed a decrease. The total emigration from Ireland, from 1st May, 1851, to 31st October 1873, was 2,247,883 persons.

MORE THAN A CENTENARIAN.—At the last meeting of the Armagh Board of Guardians, the Relieving Officer (Mr. Bourke) brought forward the case of a woman, named Clements, resident at Banbrook Hill, who stated that she had attained the extraordinary age of 113 years. He mentioned that she was extremely feeble and almost idiotic, and the Board at once made an order to allow her the sum of 2s. 6d. per week.

JOHN GOUGH NICHOLS, F.S.A.—Antiquarian literature has sustained a severe loss in the death of Mr. John Gough Nichols, F.S.A., the third of a race of English printers whose names have for upwards of a century been closely identified with everything bearing on English typography, genealogy, &c. Mr. Nichols, besides editing the *Gentleman's Magazine* for many years, edited the *Collectanea Topographica* and the *Topographer and Genealogist*; and in 1862 commenced the *Herald and Genealogist*, which is still in course of publication. He was one of the founders of the Camden Society. Mr. Nichols, who was a member of the Court of the Stationers' Company, was in his 67th year. He died at his residence, Holmwood, near Dorking.

A CLAIM FOR MALICIOUS BURNING.—The application of Mr. Joseph Kelly, timber merchant, Thomas-street, for £20,000 compensation for the alleged malicious burning of his premises, in June last, was concluded on Tuesday, before Mr. Justice Barry and the Corporation. His lordship charged very much in favour of Mr. Kelly, and the Corporation found that the burning was not malicious. The presentment was accordingly thrown out. [Compared with other recent cases in which claims were allowed, the above decision calls for some remarks upon its simple merits. We cannot, however, trust ourselves at present to discuss the subject, but may at a time when there are less strong feelings expressed in public.]

TO CORRESPONDENTS.

OLD DUBLIN THEATRES.—Theatres and playhouses existed in Smock-alley, Werburgh-street, Longford-street, Crow-street, Beresford-street, Fishamble-street, and Capel-street. Minor ones or booths for a variety of entertainments existed at intervals in many parts of the city from the close of the seventeenth to the commencement of the present century. For other information see Hitchcock's "Review of the Irish Stage" and Gilbert's "History of Dublin."

STUDENT.—The Hill of Howth, Killiney, and the mountains beyond Dundrum afford a good field for quest. With a manual, a love for the subject, and a geological hammer, you could not spend your summer holidays better.

HOME AND FOREIGN LITERATURE.—It is a fact that there are "Irish publications" sold in this city that are not printed or published here, although it is announced that they are.

BUILDERS' IRONMONGERY.—We might say all or nearly all the house-fittings and furnishings and furniture in the ironmongery way, and other ornamental glass and delft appendages, come from across Channel. Early in the present century we had some respectable manufacturers in this city. Agricultural and gardening implements to some extent are produced here, and in some instances produced well. Our edge-tool trade, as a trade, has decayed long since.

GRANITE.—Dalkey granite is harder and more endurable than Ballyknocken. There are beds of the latter, however, which are good, and of course it is easier to work than the former, which is a consideration.

ARCHITECTURAL ASSISTANT.—Among "Weale's Rudimentary Series" we think you will find a manual upon the subject. Cardboard or paper modelling is quite easy. If the lines are laid down with care, little skill is required in the use of the cutting knives or modelling instruments.

* Communications that pass a second publication without insertion may be considered cancelled, or undesirable from one cause or other.

The Irish Builder.

VOL. XIV.—No. 336.

Delayed Improvements in Dublin.

INCE the labours of the Wide Streets Commissioners ceased, street improvement has ceased, save so far as private enterprise was instrumental or public companies were auxiliary to it. The projects of our Corporate authorities have been many within the last quarter of a century, but there are only two or three public improvements carried out by them deserving of the name, and these the citizens have had to pay for, and are still paying for, although the cost of them has exceeded the first estimates by several thousands. Except a few of the interested individuals in our public boards, there are but few of our citizens so stupid as not to know that they have been taxed over and over again for the carrying out of works, some of which have never been begun, and others which were begun and were allowed to collapse. Upwards of fifty years ago a new street was projected from Stephen's-green along the line of York-street to St. Patrick's Cathedral. It remained unattempted when the present Corporation came into power, and they entertained the "notion" for a while of commencing the work. Thirty years of "Reformed" Corporate rule has left the project exactly in the same position. The construction of a new street, or continuation of Dame-street, through Cork-hill to Christ Church Cathedral during the last quarter of a century has often been brought before, and formed the subject of discussion in, our Town Council; and at present the "notion" is under consideration, but it is expected by our magnates that private enterprise is to advance the money.

The new Smithfield Market, after many years' discussion and much controversy as to the site, was at last carried through; but, instead of being a real benefit to our city or to the community at large, it has been allowed to degenerate into a shameful and flagrant monopoly, and be ruled by a parcel of salesmasters. The abattoir or slaughter-house project, after being made the subject of many debates and elaborate reports, remains in the same state of progress as it did ten years ago. The old public meat and vegetable markets of the city have been permitted to drop into ruin, and to become deserted one by one, and the traders therein encouraged to transfer their business wherever they liked. Butchers—beef, pork, and chicken ones—have been allowed to disfigure our best streets, and greengrocers and brokers to follow in their wake. These are some of the improvements for which we are indebted to our Corporation.

We were to have a boulevard extending from Carlisle Bridge to King's Bridge—beautiful myth!—and Carlisle Bridge was to be replaced by a finer structure, or enlarged or improved. More than ten years since several of our architects, artists, and engineers were humbugged over this improvement by being asked to send in

designs, for which they received—insult. A new bridge to cross the Liffey near the Custom House was entertained for a while, and 'twill probably be entertained again when there is nothing else to ring the changes upon. Essex Bridge is being improved; but if it depended solely upon the action of our Corporate authorities, and if there were not other weighty reasons for its commencement besides public necessity, the probability would be that it would be "under consideration" for ten years longer.

It would be tedious to go over and enumerate even the chief of the projected improvements to which the Corporation has in one way or another committed itself, inclusive of course of its pet schemes on drainage, utilization of sewage, people's parks, and cheap gas. We would rather, if we possibly could, point out the urgent sanitary wants and improvements Dublin stands in need of, without mentioning the name of the Corporation at all in connection with the matter; but it is impossible for us to do so, as the improvements needed devolve to a great extent upon the Corporation. If the mere sanitary wants of the city were attended to, and the streets and back places were kept clean, this in itself would be an improvement for which indeed the city would be thankful. To talk of constructing new streets while many of the old are allowed to remain as plague spots, is nothing short of a species of deception of the most reprehensible character.

Several public buildings within the last quarter of a century have been erected in our leading thoroughfares, which, no doubt, have added to the appearance of our streets. Our suburbs have extended, and are gradually absorbed in the metropolis. The townships include the vast body of the new buildings; and these new districts, although they contain many speculative dwellings, yet on the whole they may come under the name of "improvement." A great portion of the old city on the south of the Liffey is completely gone into decay, and the older portions of the north of the river have fallen, or are falling, into the same condition.

We need an independent body, apart from the Corporation, to watch over the growth and decay of the capital, and carry out projects connected with its thorough drainage and building improvement. We want a Dublin Metropolitan Board of Works to look after the suburbs, and pave the way for the future wants of the metropolis. If the Civic body cannot do the duty that devolves upon them, time will shew whether their absorption into a metropolitan body will not become a matter of necessity as well as public economy. When institutions become effete, abolition is the most sensible and statesmanlike course to adopt. The architectural improvement observable in a few of the chief streets in the heart of the capital is, we have already said; owing more to individual enterprise than Corporate activity.

Municipal government fails in one of its great essentials if it fails to improve as well as to protect. Were there no other recognised power, the self and collective interest of the community would be united and arrayed against evil doers. A public body that wastes the public funds, raised under the name of taxation for improvements, and misapplies them to other sinister purposes, is guilty of the crime of trading under false pretences. No matter how the fact may be disguised, it is a fact still that municipal government in

Dublin has been for several years a huge fraud upon society, and privileges of local rule that ought to have been prized have been prostituted to the basest uses.

In our experience we have always found in the British Islands that wherever corporate or local bodies devoted their time to political and religious wrangles the state of the towns they represented were always far behind others in everything that appertained to the common weal. The present condition of the greater part of our city proves the truth of our views. Whatever little improvements may be in progress at the instance of the Corporate authorities they are sure to be for long months, or rather years, drawing their slow length along, and costing vast sums altogether out of proportion with their intrinsic worth or their benefits spread over a number of years.

There is a remedy for all this neglect we have been describing. The Irish Executive possesses some powers in a sanitary direction which it would be well it exercised; and the law should be enforced with the same strictness against a public body as against a private individual. The Local Government Board have powers, and it would be well if they would enforce them. A short bill, however, brought into the next session of Parliament, which could be easily passed, would give ample powers, if rightly framed, without leading to increased taxation, for the carrying out of urgent improvements. If compulsory education is rendered necessary in the interests of the future of our people, duty must also be made compulsory on the part of local legislators.

ANENT OURSELVES AND OTHERS.

THE PASSING YEAR.

IN closing the fifteenth volume of the IRISH BUILDER, a few words may be in season. Fifteen years, reckoned by the life of an individual or by the existence of a project, though a small space compared with the age of the world, yet it represents a period of time fraught with many changes. Fifteen years, even when added to the life of a man of middle age, makes a serious difference often in a man's activity and capacity for labour. Men and projects are born to die; but principles exist for aye, and, like matter, are indestructible. Looking back over our journalistic career, there is much to feel pleased with in connection with our country, and chiefly its capital; but, on the other hand, there are many matters which have transpired which must beget well-grounded feelings of distrust and regret. Despite the inaction of our local authorities in the matter of improvements, the city has progressed in an architectural direction, and the building interests are better represented. The members of the architectural profession have grown more alive to their own wants and those of their clients; but abuses still exist which we hope a few years' more earnest attention will remove. We have ourselves in our own sphere exerted our energies to the utmost for the protection of the building interest, and to the exposure of the practices which have often brought shame on the calling. In some directions we have found sympathy and ready assistance, but we cannot close our eyes to the fact that we have experienced an amount of lukewarmness on the part of the profession, as a body,

which we never could have anticipated. Perhaps we should not complain, for members of the profession have not been true to one another, and consequently their interests have suffered. A resort to flattery and puffing on the part of members, and a connivance with such subterfuges by any section of the Press is, or ought to be, beneath the dignity of an honourable profession. Merit and capacity are the only qualifications that can honourably be depended upon, either by the architect or the builder, or those who represent their interests. No individual or single professional interest should be served, to the neglect of the general interest. Our clients are units of the public, and all should be equally and honestly served. It rests to a great extent with architects, engineers, builders, and operatives whether their respective claims will receive a fair hearing, and their wrongs be redressed within the next few years. The interests of all are bound together, and unity of purpose will alone effect the desired object.

In all branches we are far behind our brethren across Channel in our devotion to our respective avocations. There is a steadiness needed which is absent. Our efforts are abrupt and feverish. We are stirred to action by a trivial cause; and, on the other hand, when a real necessity exists, there is scarcely a response. We expect others to do what we should do ourselves; and a single letter or article in a journal is relied upon to accomplish what the action and proceedings of an association alone can rightly accomplish, assisted of course by due publicity. No party or profession can grow strong or powerful who neglect their interests or those of their representatives. What is true in the political world holds true in the professional one; conservatives and liberals support their respective interests, parliamentary and journalistic, and by so doing command influence. Architects, engineers, medical practitioners, lawyers, and other professions in the sister island are well represented by journals, but these journals would be powerless did they not meet with the strong and steady support of the respective professions. "The greatest happiness in the greatest number" ever exists, when properly brought together. The wider a real grievance is made known, the wider grows the sympathy and the support. Men in this country have ever been looking abroad for the response they could have found at home, had they acted with sense and judgment. Local interests can only be properly served where those interests exist. Outside help is always acceptable, no matter from what direction it comes, and it should never be despised; but it is a folly to expect that a voice in the distance can be as plainly heard as a voice in our midst.

In completing our fifteenth volume, we wish all our professional and general readers the consummation of their desires in every commendable way, and we hope they will take our remarks in the same kindly spirit in which they are offered. Plain speaking is not only needed betimes, but is needed always. Failings and shortcomings should never be glossed over to make them palatable. Evils should be rooted out with a firm hand; but wherever admitting of kindly treatment, that method of course should be adopted. As representatives of the architectural, building, and cognate interests, we have ever acted, as far as our light allowed us, with strict impartiality, and have always given

the humblest as well as the highest a fair hearing. Looking on the past with some pride, and on the future with hope, we close our remarks at present in wishing our constituency the compliments of the season.

THE PRESERVATION OF ANIMAL REMAINS.

I HAVE already given the theories accounting for the preservation of animal substances from natural causes—1. From absorption; 2. From tannin; 3. From congelation;—and, in order that I may be the more readily understood, I will remark upon each consecutively. Preservation by absorption, if carried on too rapidly, as in the burning sands of Africa, leaves only a withered emaciated form, which is with difficulty recognized as an example of its living congener; while, if produced gradually, as in the sands of Peru, the vaults of Toulouse (France), or St. Michan's, Dublin, it forms the nearest approach to the best specimens of the Egyptian mummy.

With regard to tannin, I will extract from Dr. Rennie's "Essays on Peat Mosses," page 521, the following:—"One interesting circumstance attending the history of peat mosses is the high state of preservation of animal substances buried in them for many years. In June, 1747, the body of a woman was found six feet deep in a peat moor in the Isle of Axholm in Lincolnshire. The antique sandals on her feet afforded evidence of her having been buried there for many ages; yet her nails, hair, and skin are described as having shewn hardly any marks of decay."

"In a turbarry on the estate of the Earl of Moira, in Ireland, a human body was dug up a foot deep in gravel covered with eleven feet of moss. The body was completely clothed, and the garments seemed all to be made of hair. Before the use of wool in that country, the clothing of the inhabitants was made of hair, so that it would appear this body had been buried at that early period, yet it was fresh and unimpaired."

It is naturally asked, Whence arises this antiseptic property in peat? I believe it to be, as I have stated in a former paper, from the effects of tannic acid developed from the large quantities of timber immersed in these mosses.

Dr. MacCulloch, in "System of Geology," vol. ii., page 840-846, states the soft parts of animal bodies preserved in peat mosses are converted into adipocere by the action of the water contained in the mosses; but he expresses doubts with regard to the causes of the preservation of the remainder. Tannin occasionally present in peat, he says, is the produce of tormentilla and some other plants; but he thinks the produce too small, and its occurrence too casual, to give rise to effects of any importance. He, therefore, leaves the matter undecided. Doctors frequently differ in opinion, and I must therefore leave the matter to be discussed by abler pens than mine.*

Referring to congelation, there is nothing new to us in accounting for animal remains being preserved in ice; but considerable difficulty arises when enquiring with regard to the preservation of the mammoth in Siberia, or the rhinoceros discovered entire with its skin and flesh embedded in the frozen soil of the same country, as described by Palles, and related in his "Travels in Russia,

* Objections having been made to the statement contained in the paper "What is Adipocere?" that the joints of the remains in St. Michan's vault were flexible, I have to remark it is now more than twenty years since I, in company with some friends, inspected those remains. The person who showed them lifted one of the arms, bending the shoulder and elbow joints, and thus described the manner in which the hand was applied for the cure of rheumatic affections; and we concluded, if all the joints had been similarly treated, and for sufficient time, they would be equally flexible. Hinges, when out of use, are generally difficult to move; and so, perhaps, may these joints now be. I would have preferred leaving this circumstance untold, but that I do not wish to see a statement which is strictly correct impugned. I give no credence to the supernatural, although I have the utmost faith in cures being performed when the efficacy of the agency employed is fully relied upon by the patient; therefore I object to countenancing them for the above reason.—(Note by the Author.)

1798 and 1794." During our historical era the mammoth (*elephas primigenius*) is an extinct animal; but, judging from its fossil remains, and from the habits of its representative the elephant, it was, as well as the rhinoceros, the inhabitant of a warm climate. It will be asked, then, how these remains could be embedded in ice?

In a great portion of northern Russia and Siberia immense quantities of tusks of the elephant are found embedded in the soil, and form an important article of commerce; yet so fresh is the ivory after being buried in a frozen region for ages, that it is considered as fully equal to specimens derived from the present race. How, then, is it to be accounted for that the remains of these animals, inhabitants of a totally different climate, can be found in these latitudes?

Modern geology has taught us (*vide* Lyell, vol. i., chap. vi.; also Dr. Lardner's Tracts) that at a former period of the earth's history, and prior to the creation of man, the temperature of the polar regions resembled what is now experienced within the tropics; this the fossil remains of animals and plants discovered there abundantly testify. That the temperature gradually changed, and that the animal tribe became fitted by the Creator to accommodate themselves to the new climatic influences they were placed in, is proved by these perfect remains being found covered with long hair; but as vegetable life, such as would be sufficient for their subsistence, must have become extinct before a period of perpetual frost would arise,* we must adopt a different theory with regard to the example before us. During the period of alternation of climate, as a matter of course, a greater degree of cold prevailed in regions of high altitude, as it does at present; and we have innumerable instances in the warm climate of the Alpine valleys of Switzerland of herds of cattle and human beings being overtaken and buried under avalanches. Were it not for the hot sun of the succeeding summers melting away the snow, we would have their remains preserved for indefinite time. If, then, we recognise the fact that a warm temperature at one time prevailed over northern Europe,† and that it was gradually changed, we can easily understand what followed; for, as by degrees these regions became colder and colder, we can infer the reasons why these animals became extinct, and are only now discoverable occasionally as preserved specimens in ice or in their fossil remains now existing.

W. H.

CURRENT LITERATURE.

THE MAGAZINES.

Blackwood of this month has its usual forcible article on the political question of the hour, the subject of the present paper being "The Conservative Party and National Education." The imprudent policy of Count de Chambord is discussed in a second paper, but with these political topics we have nothing to do. We may say, however, the subjects are cleverly handled. The other papers of note are "Phidias, and the Elgin Marbles," and "A Story of the Rock." The articles of this month are, on the whole, solid, yet withal interesting.

Fraser gives an opening paper on the late John Stuart Mill's autobiography. The

* "If it be objected that the elephant—which, by the union of strength, intelligence, and docility, can render the greatest services to mankind—is incapable of living in any but the warmest latitudes, we may observe that the quantity of vegetable food required by this quadruped would render its maintenance in the temperate zone too costly, and in the arctic impossible.—(Lyell's "Principles of Geology," vol. ii., chap. iii., page 46.)

† That the temperature of the entire globe was once fully equal to present tropical heat, we need no confirmation. Wherever coal deposits exist—and that is in greater or less quantity all over the earth,—we have the carbonized strata of a mould once supporting the most luxuriant vegetation thickly interspersed with the stems and roots of cone-bearing pine and cycadaceous plants, as palms and tree ferns, which now only adorn tropical scenery. In the Isle of Portland (England)—whence is derived our most celebrated building stone—the strata over the quarries is one vast mass of petrified trees and plants bearing no analogy to existing vegetation; on the contrary, they are uniformly the type of tropical flora of the present day.—(Vide Dr. Lardner's Tracts on the Crust of the Earth.)

criticism is severe, and contains some good points. "The Future of Farming" will startle farmers of thought, and lead to further thoughts upon the vexed question, in view of the possible future of the agricultural interest. "The Historical Manuscripts Commission" is good. We have ourselves some time since made some remarks upon the subject, and will probably return to the matter again, so far as Ireland is concerned. "A Trip to Bavaria," and "Folk Lore in Devonshire," will afford pleasant reading.

Belgravia contains two papers from the pen of George Augustus Sala, which will be found, like all that writer's contributions, readable and enjoyable. "That Poor Dear Captain Lambswool" and "Griselda" will make the reader laugh. "Sal Parker's Ghost" is rough enough for fireside reading in the "Bush." "How I Lost the Country," by Mr. F. Talbot, is smart and piquant.

Temple Bar is very good this month. "Uncle John," by Mr. Whyte-Melville continues well as an opening tale. "Juvenal in London" is a satire of some force of indignation. "The Ideal of a National Church" deals with a subject of no professional interest in our way, though written well from one point of view. "Richard Steele" is a biographical sketch that should claim more attention from a class, we might say from the general class of readers, as it details particulars of a man who should be better known than he is. As an Irishman and a celebrated essayist, Richard Steele has claims upon our countrymen. Steele was an associate of Addison in the writings of the *Tatler*, *Spectator*, and *Guardian*; he was also a dramatist of merit. He was a native of Dublin, where he was born in 1671; but he died near Caermarthen, in Wales, in 1729.

London Society has some good papers; among those of Mr. Walter Thornbury on "The Tabard Inn and the Canterbury Pilgrims," "Chastelard to Mary Stuart," a poem by Mr. Guy Roslyn. The serial tale by Florence Marryat continues well, and promises to end the same.

The *Gentleman's* is good, as usual. "Clytie," the serial story, has some good chapters, and grows in interest. "Charles Lamb," by Mary Cowden Clarke, furnishes some pleasant letters of that much-esteemed essayist, and also some verses of merit. "Making the Worst of it," by Mr. Hopkins, and "An Oxford Problem" are good papers. The magazine as a whole is a capital issue.

St. James's continues "Miss Dorothy's Charge"—a very good story, full of animation. "Among the Pictures" is continued, and is welcome. "A Nosegay of Translations" contains a few more of the late Sir John Bowring's agreeable renderings of the foreign muse or poetry in many lands. "Reply to Quarterly Review on the Present State of English Poetry" will interest critics from its remarks upon the poetry of Tennyson, Byron, and Bowring. The critic makes some good hits, but he is not quite at home in all his deductions. "A Visit to the North-West Coast of Tasmania" reveals some particulars of colonial wonders that must interest English readers and readers in general.

Macmillan opens with a paper, the subject of which has formed a theme for many writers within this century—"Galileo and Papal Infallibility." Whether Mr. Sedley Taylor makes too much of the sufferings and humiliation of the great philosopher, the reader who peruses the article must judge. Mr. Black's capital story, "A Princess of Thule," we have before spoken of, and we may add that it is spiritedly continued. The beauties of Lincolnshire scenery are painted by a Lincolnshire rector. "Charity Electioneering" is worthy of note from the abuses of the system of voting charities now carried on. "Spanish Life" is pleasant reading, and "The Religion of Goethe" deals with the reverential spirit of the great German poet's mind.

The *Argosy*, which we have missed for some time, affords a very good supply of matter of varied interest. The serial story, "The Master of Greylands," is an excellent story,

and well sustained. The articles of merit, and some of them very attractive, are: "Westminster and its Window Gardening," "A Midnight Meeting," and "One White Lie." "Fra Angelico" is a translation from the German of "Elsie Polko," biographical and critical, and well rendered.

THE APPLICABILITY OF THE FRENCH BARRAGES TO THE SHANNON.*

In our notice in last issue we gave some extracts from Mr. Forsyth's report in relation to the different forms of barrages used on the rivers Seine, Marne, and Yonne, and their applicability to the Shannon. Mr. Manning makes a separate report, and the reason given for this division of labour is stated as follows:—"Previous to our departure from Ireland, Mr. Forsyth expressed to me his desire that I should make a separate report to the Board, not from any apprehension that we would have any difficulty in framing a joint one, but in order that my judgment should not in any way be constrained or even influenced by any opinions he had expressed or might form upon the subject of those barrages." "The question which I have to discuss is the applicability of the French barrages to the circumstances of the Shannon, and the regulation of its flood-waters; but as those weirs have been erected solely with the object of improving the navigation, and not in any way for the purpose of drainage, I shall best explain their construction and working by giving a short account of the navigation of the Seine and Yonne, on which rivers they have been very extensively applied."

Mr. Manning then proceeds to describe with great exactness the condition of "The Upper Seine and the Yonne." The needle barrage, the barrage with falling gates, the water-pressure barrage, the drum barrage, and the cost of barrages. Next, the River Thames lifting sluices are described, the stanches on that river near Oxford, the river Severn and the river Trent. Speaking of the stanches on the river Thames, Mr. Manning writes:—"On the upper part of the river from Lechlade to Oxford there are 11 weirs, the falls at which vary from 8 in. to 2 ft., at each of them is a sluice (said to have existed with little improvement from the time of the Saxons) by which the water is flashed in a similar way as on the Yonne. This system of navigation was in ancient times in general use in England; and the late Sir William Cubitt mentioned in 1845 that when he undertook the improvement of the River Stour in Essex there existed 13 'stanches' which he described, and which were almost identical with the needle barrage, but without the moveable frames invented by M. Poirée."

Mr. Manning thus sums up the advantages and disadvantages of the French system of barrages, and their applicability to the purposes of the River Shannon. This, which forms the concluding portion of his report, is very concisely and clearly put, and is of sufficient importance to reproduce it at length:—

"APPLICABILITY OF THE FRENCH BARRAGES TO THE SHANNON."

"The pontoon sluice of Mr. Krantz is a modification of the American bear trap sluice, another form of which was proposed about twenty-five years ago by Mr. Forsyth for the drainage of Lough Erne. The principle is applicable to the case of the Shannon; but should it be adopted I would certainly recommend that it should be applied to a number of separate spans from 20 to 30 feet wide, with piers between them.

The drum sluice acts upon a principle of counter pressure (also suggested by the bear trap), which was taken advantage of in the construction of a sluice erected by me for the Board about twenty years ago; it is also applicable to the Shannon, and

may in my opinion be improved and simplified by adopting a form suggested by me to the Board some years ago.

Although not a French barrage, I may here state that the lifting sluice of Mr. Leach is also applicable, its sole disadvantage is the occurrence of sluice jams of short distances, which occupy the waterway, and collect weeds and other floating bodies.

The piston sluice of M. Girard, I have not seen, but from the description given of it I have no doubt that a sluice equally effective in all respects might be erected at much less cost.

The needle sluice of M. Poirée, and the falling gates of M. Chanoine, I shall take together. The objections to those sluices by the French engineers, the validity of which has been proved by experience, would prevent me from recommending them; but even were there no weight in those objections, and that both had been quite successful on the Seine and Yonne, it would in my judgment be practically impossible to adapt them to the different state of things which exists on the Shannon.

On the Seine and Yonne these barrages are never closed until the water has fallen to within about 18 inches of the lowest summer level, it being then about 6 feet under the top of the barrage, or in other words, as nearly as possible at the same level as the stone crest of the overfall; such a variation in level could not be permitted on the Shannon, except the navigation was entirely abandoned. The greatest distance between any two barrages on the Upper Seine, viz., between Ablon and Evry, is 7 miles, and the water surface in that distance is about 344 acres. The distance between Killaloe and Meelick is 31 miles, and the water surface is 32,000 acres. The summer discharge of the Seine would fill the level above Ablon, between top water and summer level, in about 16 hours. The summer discharge of the Shannon would not raise Lough Derg between the same levels in less than 48 days.

Having now described the construction and working of those barrages, and stated my views of their applicability to the circumstances of the Shannon, I beg to state some facts which have been brought prominently under my notice during the preparation of this report.

The catchment of the Shannon at Killaloe is 4,000 square miles, and the maximum discharge is 1,600,000 cubic feet per minute. The channel above the weir is from 500 to 600 feet wide, and across it an oblique weir (1,100 feet long) has been erected; it is composed of cut stone, and has no sluice in it. The crest of this weir is 6.79 feet above the upper sill of Killaloe lock, and during the last winter the floods rose 3.46 feet above it, and approached it with an inclination of 5 feet per mile. The flood in Lough Derg was 5.38 feet over the weir, or 12.17 feet over the lock sill.

The catchment of the Seine at Port-à-l'Anglais (a short distance above the junction of the Marne) is 11,900 square miles, but the maximum discharge is only 1,680,000 cubic feet per minute. The channel at this place is 540 feet wide, and across it has been placed a barrage, the effective length of which is 398 feet. It consists of a solid stone wall without any opening in it, from 14 to 20 feet thick, and the lowest part of which is 6.59 feet above the level of the lock sill; the highest part is 10.53 feet, and the average height from one side of the river to the other is 7.19 feet above the same level. On the top of this wall are placed moveable boards, rising 16.44 feet above the sill. During the last winter the flood rose 28 feet above the lock sill at this place.

There can be therefore no doubt that the weir of Killaloe is much more effective for the discharge floods than the barrage at Port-à-l'Anglais, and if it were possible during the last winter floods to have removed the weir at Killaloe, and replaced it instantaneously by this barrage, the height of the flood would have been increased and not diminished.

The stonework of the other barrages on the Seine and Yonne is not so high as that last described; it varies from 4.85 feet to 1.21 feet, the average height being 3.55 feet. The average effective length being 373 feet on the Seine, and 305 feet on the Yonne.

Such is the state of things at present; what relation does it bear to the original state of the rivers previous to the execution of the works on either of them?

The top of the stonework of Killaloe weir was placed by the Shannon Commissioners 10½ inches below the level of the summer water of 1836, and only 1 foot 10 inches above the level of the bottom of the river before they excavated it. The top of the stonework of the French weirs was placed on an average 4 inches above the level of the summer water of 1840, so that, taken in relation to the state of things previous to the execution of the works in both rivers, the level of the solid stonework of the French barrages is 14½ inches higher than the coping of Killaloe weir. It is therefore plain that

* "Reports to the Board of Public Works on the Construction and Working of the Barrages on the Seine, Marne, and Yonne, and their Applicability to the Circumstances of the River Shannon, &c."

the discharging power of Killaloe weir is not only greater than that provided for an equal quantity of water on the Seine, but is also greater than the power of the river above it, until the flood rises in the lake, so as to give a surface inclination of 5 feet per mile down to the weir.

I have been careful to point out those facts, not with the object of discussing the relative efficiency of those weirs, but in order to show as clearly as I can that any expenditure incurred upon the erection of sluices in the weir at Killaloe, without at the same time increasing largely the capacity of the channel above and below it, will not reduce the level of the flood in Lough Derg, and will be a useless waste of money.

If, however, the dimensions of the channel be enlarged by the removal of an adequate quantity of excavation, then any one of the three sluices I have named, or perhaps one equally efficient, but more simple and cheaper than any of them, may be applied with success to the regulation of the flood waters of the Shannon."

Pressure of other matters has prevented us from entering more minutely into the subject of the reports of Mr. Forsyth and Mr. Manning, as they were very suggestive of thought. We hope, however, to revert to both reports again on an early occasion.

THE ROYAL IRISH ACADEMY.

A STATED meeting of the Academy took place on Monday evening last at 19 Dawson-street,

SAMUEL FERGUSON, Esq., LL.D., V.P.,
in the chair.

Two papers were read by Henry Hennessey, F.R.S.—1, "On additional instances of the Tidal Flootation of Sand." 2, "On an Inverted Lunar Halo, and a Lunar Rainbow."

Dr. O'Donovan, in proposing that the latter paper be referred to Council for publication, said he had seen on the 29th of November last, at Portarlinton, a phenomenon very similar to that last described by Mr. Hennessey. He had only once before witnessed a lunar rainbow with prismatic colours.

Sir William R. Wilde seconded the motion, which was adopted.

The Treasurer, for R. R. Brash, Esq., Cork, read a paper on Ogham-inscribed stones from Tinahely, Kerry. These are two of the lately-acquired Windele collection, now deposited in the lapidary museum of the Academy. Mr. Brash reads the first

ANCM FURUDDRAN MAQI CULIGENN,

and indicates several passages in the "Annals" in which the name Furudran occurs. It is preceded by a formula (*anm*) not yet deciphered. The second Tinahely inscription he reads

ANMTX GANN MAQI DEGLENN,

and refers to Gann a leader of the Firvolg. It was observed that the occurrence of the formula *anm* in the form *anm* in the first example militated against the idea lately suggested, that these letters stand for the Latin *anima*.

Dr. Ferguson, in continuation of his paper on the "Bilateral Key to South British Oghams," adduced further examples from Clydai and Cilgerron in Pembrokeshire, and dwelt on the colloquial form of the name *Trenegus* in the Ogham text of the latter as contrasted with the expanded *Trenegussus* of the Latin, showing that "ceremonial" forms of name were not peculiarly Oghamic. Referring to the argument for the identity of names on old Welsh monuments with those in Irish Ogham inscriptions, based on the *Macoudecceti* monument in Anglesea, which has been held to be inapplicable, for particular reasons, by Welsh scholars, he adduced another Latin inscription not open to the same objection, now at Tavistock, bearing a like legend, and produced photographs from casts, and referred to numerous other examples of the same name or designation in Ogham texts from different parts of Ireland. The formula *Maqi Mucoi*, of even more frequent occurrence here, he stated, had been recently detected by Mr. Brash on the Ogham-inscribed obelisk at Bridell, in Pembrokeshire.

Lastly he gave an example of an inscribed stone from a cave near Cork, having, in Ogham, the name *Uleacagni*, which has been found in several instances in Roman characters on Welsh monuments; and concluded by saying—"The question remains, whence did this Oghamic taste among the South British people originate? Did they impart it to the Irish, or the Irish to them? Are these Ogham texts, or some of them, pre-Augustinian and pre-Patrician respectively, or are they memorials in both countries of Irish religious zeal in the sixth and succeeding centuries? I do not undertake to answer; but I may express my conviction that it would be difficult to propose questions more worthy of the consideration of men of learning in both countries."

Both papers were referred to the Council for publication.

Edward Cecil Guinness, Esq., and Robert R. Kane, Esq., M.A., were elected members.

CORRESPONDENCE.

ARCHITECTS AND BUILDERS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—You had a very severe article in your last, against builders, and it has become the fashion lately to pitch into them as a class. Of course a great deal may be said against builders practising as architects; and, on the principle of live and let live, I object to their doing so. But, from the "high art" point of view, I think there is a great deal more nonsense than common sense talked on the subject; and, after all, are there not in Dublin several "eminent" architects who have turned builders on their own account, and made fortunes by doing so? Do they, as a speculation, and as a general rule, erect better houses than those builders who do the same? After all, it is purely a matter of business in one sense. A man has a lease of a certain bit of ground, and he runs up houses upon it to last as long as his lease. I maintain that a builder is as fully justified in doing so without an architect, as an architect is in doing so without a builder. This is quite a different matter from a builder cutting an architect "out of a job," as the phrase is—which is, really, the sore point with the members of our profession. The allegation may be true—possibly is,—but I don't think it is done by respectable builders to anything like the extent we, as a class, suppose.

For my own part, I can only say that I do not look upon builders generally as incarnate rogues, blood-suckers, and the natural born enemies of architects. I may have been, heretofore, more fortunate than my brethren; but I don't see any grounds on which to base the assertion that my case is essentially exceptional. I unhesitatingly say that I have been exceedingly well treated by them; I will go even beyond this, and say—and I do not consider myself lowered by the acknowledgment—that, in carrying out some few large contracts, I have often benefited materially, and served my clients better, by listening to their suggestions.

The theory is, that, unless an architect is "down" on the builder, he is not doing his client justice; and, that the builder requires to be watched or he will of necessity rob said client. Now, it may be a very unpleasant truth for an architect to swallow; but if he and his client do not know, every builder he employs knows, that he can "chisel" the best architect who ever drew a plan.

My firm conviction is, that the more a professional man abuses his builders, the less he knows about his business. Let him ask himself a plain, straightforward question. If he is of the school of architects who go in first for getting a client at all hazards, and then for employing a tradesman at a figure which will not pay for the work—to the exclusion of another who put in for it at a fair price, he deserves what he gets; and, if he obtains the bare value for the money expended he

should not grumble. He can't expect first-class work at a third-class price. It is no answer to say (though it may seem conclusive to the client), that the builder undertook to do what could not be done for the money. The architect's duty is, to inform his client that a certain contract, if properly done, will cost so much, and that it is not wise to expect anything more. How many professional men have the pluck to do this?

There are "jerry" architects as there are "jerry" builders. Let me put a common case to one of the former. A client comes to his office, and says he wants certain works carried out for a certain sum. He will not "have any money wasted on ornament," &c. The "jerry" architect, who has compassed heaven and earth to get this one client, rubs his hands, and says "yes" to everything. He makes his plans, elevations, and sections to an $\frac{1}{8}$ scale, and he cubes up the building at, say, 9d. per foot; this gives him, in ordinary cases, an approximate idea of the cost, which turns out to be, probably, double the sum allowed. He then reduces the cost, to his own satisfaction, by the summary process of taking the cube at 4d. a foot, and telling his client the result.

He can't go to respectable builders with his job, at this price, and he has to fall back on the fourpenny builders instead. The ninepenny specification is signed, and then comes the tug of war—"pull devil pull beggar"; either a long bill of "extras," or a smash up, or both: "all upon Roger, and Roger to pay"—Roger being the client, who, ever afterwards, looks upon both architects and builders as men to be shunned.

Is the whole blame to fall on the builder? Does he never find himself sold, when the details come to be made out from the small scale drawings—and, in cases where no quantities are given? I think that if he insisted, in most cases, in having quantities, and also details to a large scale, furnished with the smaller plans *before he signed his contract*, he would only be insisting on what is his right. The fact that the respectable builder does not do so, argues a confidence in architects generally for which he gets very little credit; the fact that the other sort of builder *does not do so either*, may be accounted for in a different way.

You may flatter yourself as an architect that everything will come right, in your dealings with the latter; but, if you look for 9d. change out of 4d. somebody must be short, and there must be two fools out of three. Of course every builder, whether he be an "eminent" one or not, knows very well as a matter of fact that eight out of ten of the "eminent" architects for whom he works, don't know the difference between Sundswall and American red timber; and I am quite certain that, over their grog, builders discuss us and our "eminence" pretty freely. That's all the harm they have done me up to the present. I have been "done out of a job" by a builder; but then he worked in the interests of another architect whom he liked better; I don't grumble at that.

My advice to the profession is, to let builders alone in print and among the public; to set our faces against accepting tenders at 4d. a foot; and to make our clients fully aware of the worst in the matter of cost, before the final step is taken. This would be more to the point than writing stringent agreements, and elaborate and long-winded specifications. There was a clause in the Ecclesiastical Commissioners' specification for Church works, about knots not being larger than a sixpence!—this was simply silly; but there are clauses in a printed agreement, now becoming fashionable in Dublin, amongst architects, which mean that we are *not to be responsible for anything—not even errors in plans*. What more does any architect—be he "jerry" or "eminent"—want? This agreement has been the work of the heads of the profession, and has been compiled for our special protection. It is to

What is the origin of this slang word *jerry*? Was the first builder who swindled a client or an architect baptised Jeremiah?

be obtained by the small fry at 4d. a copy—which can't be called dear, for the purchase of absolute immunity from all danger. It is to be presumed that, after its general adoption we shall be, individually, safe in the hands of any contractor—provided we don't take a "tip."

And now, Mr. Editor, a word or two, in conclusion, on this very subject of "tips."

It was insinuated in the Court of Queen's Bench the other day, in a building case, that bribes have been given to architects in this city. It appears to me that this should be investigated at once.

Don't you think that the very august, but rather moribund Royal Institute of the Architects of Ireland, would do well if, instead of expending its energy on entertaining, and probably boring the Lord Lieutenant, it were to call a meeting of the profession at large, and demand that every member should make a declaration for the purpose of clearing himself from the imputation? I am sure the Association would follow the example; and we should then know whether there are any black sheep or not.

The matter should not rest where it is. If after the steps are taken, which I suggest, the culprit or culprits should still remain undiscovered, let us get up a handsome subscription for a testimonial to any man who will only substantiate the charge.

I am willing to head the list with £20; and I am certain that, if appealed to, the much-abused fraternity of builders will come forward and aid us by donations for the same purpose, so as to make it worth while "to bell the cat."

I am naturally of a singularly modest and retiring disposition, hence it is that I merely subscribe myself, yours, &c.

AN ARCHITECT.

P.S.—Do you think I would be justified in adding "C.E." to my signature? I have an uncle a county surveyor.

[The above letter will possibly call forth some remarks from members of the profession. It is an architect's letter, as it professes to be; but in our character of journalists we are not called upon to take up the cudgel, as we have used it pretty freely and honestly already in more directions than one. A passing word or two will not, however, be out of place in respect to one point of "An Architect's" letter. His very fair offer of £20 should, we think, be accepted by those who can "bell the cat," or even let her out of the bag. We quite agree with the writer that the Royal Institute of the Architects of Ireland should accept the suggestion he throws out. Black sheep is only another name for "scabby sheep," and we know the old adage still holds true, that one is sufficient to infect the whole flock, if unremoved. When a man swears upon oath he has given bribes to architects, we are compelled to believe him until his evidence is falsified. If he is proved to have perjured himself, let him meet his deserts.—ED. I. B.]

A SCHOOL FOR BUILDERS' SONS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have been prompted, from your former kindness, to ask your opinion concerning the advisability of the builders' sons of Dublin joining together, and establishing a school of art and science for their own special information and knowledge. If such a school should be established, I am sure it would not alone be a success, but it would be for ever a source of delight and pleasure to hear all the technical and mechanical problems, &c., explained satisfactorily that might arise from time to time. As an "Irish Builder," taking an interest in your sons, you will give your impartial opinion on this subject, and if it is worthy of your approbation (which I hope it may), I know you will

leave no stone unturned in adopting the best means of finding out how far the builders' sons will support this suggestion. Hoping you will excuse me for trespassing so far on your valuable space, your obedient servant,
A BUILDER'S SON.

December 4th, 1873.

[We print the above for what it is worth, merely remarking that we have touched upon the subject before on a broader basis on a plan that would not only embrace builders' sons, but others connected with the different branches of the profession.—ED. I. B.]

UNKNOWN DUBLIN.

BY THE "OLDEST INHABITANT."

Edited by Mark Philip O'Flanagan, T.C.D.

NONDESCRIPT-QUAY.

OUR latest visit to this riverine promenade gave rise to many reflections, and awakened some olden and golden memories and associations. "The Walk" since our boyhood days has indeed undergone many changes, yet it possesses, despite the hand of time and man, some of its earlier features. Albeit the bustle that always signalled "The Walk" on summer and autumn evenings, it was always much resorted to by bachelors, spinsters, and uxorious benedicts and their better halves. The footways were tolerably broad; the houses, though not uniform, were well built and homely looking, and some possessed little patches of gardens in front, with shrubs, well protected by stout iron railings. Fifty years ago or upwards the railings in front of the houses began to disappear one by one, and the gardens and area spaces to be covered over—the usual precursor to the conversion of the lower storey of the houses into shops. The railings of some dwellings remain yet, but doom is thickening around them. Whether through oversight or accident, it is difficult to say now; but the fact remains, that this piece of the Unknown City was left out in the cold when the other portions of the embankment were being christened. Though originally rescued from the ooze of the river, not long after its formation it possessed special charms to recommend it to our business citizens, and settlers occupied the houses as fast as they were built. The founding received a very pretty name early in life by being called "Sweethearts' Walk," although a business name would have been more suitable and in accordance with the callings of the dwellers. What's past is past, however, and Nondescript-quay need not be ashamed of its history. The footprints of great and good men are on its flags and hall door-steps—merchants, lawyers, churchmen, statesmen, artists, poets, journalists, orators, agitators, and a thousand and one others, many of whose names are still household words. The kindly words and interesting works of some cheered us in our early struggles, and won us to fields and pursuits akin to their own. The cold church vault and the green sward hide their faces that often lit up with a smile at our boyish queries; and the broad Atlantic separates us from not a few whose tongues and pens waked us to wonder, or warmed us into an enthusiasm that age can never chill, and affection of the mind or death can only destroy. Our cicero is at our side, and his memory will no doubt recall matters that deserve to be known.

"This is truly, sir, as you say, Nondescript-quay; but to me it is known as the whilom 'Walk,' and a pleasant one it has been in my boyhood days. My father,—who lived to an advanced age, like myself—often described the aspects of the place to me, and the line of thoroughfare in the rare known as Great Sand-street and 'The Plots.' These places, sir, in my father's time, were by the river-side, and shipbrokers and merchants had their allotments or plots of ground marked out for them there, for the landing and storing of their goods. Let us walk along, and as far as I can tax my memory, I will

point out to you the houses of the old residents of my early days at the close of the last century and the commencement of the present.

"In the early days of the Irish Parliament 'The Walk' was occupied nearly altogether by merchants, mostly in the wine and corn trades; some of them were extensive shippers and importers of foreign produce. Among the more remarkable merchants and traders of note, several of whom filled public appointments in the city, were—John Allen and Son, Joseph Anderson, Thomas Corfield, Edward Druett, Jeremiah Dwyer, the three Brothers Geale, Andrew Grehan, Brindley Hone, William M'Cullagh, Simon M'Guire, Stephen Millar, William Netterville, Valentine and Malachy O'Connor, William Colvill, William Skeys and Co., Matthew Stritch, Valentine Tallon, William Twigg, Joseph Lynam, Robert Black, or Black and Murray. I mention their names, sir, because the majority of them were *bonâ fide* merchants, and a good many of them noted otherwise, as members of the Common Council, directors of banks, members of the Chamber of Commerce and Ouzel Galley, representatives of the Guild of Merchants, and other civic and general institutions. Among those whose names I have mentioned you will, no doubt, recognise many who continued to reside on 'The Walk' till within your own memory, and even until the present some names I mentioned will be found represented here in the persons of sons and grandsons in the old line of business started in the last century. During the first thirty years of the present century, or perhaps a little over, the old businesses were carried on with spirit on 'The Walk,' and new merchants and traders succeeded to the places of others who died out or retired. Among the more noted of these between the first twenty and forty years of this century, in addition to some whose names I have already mentioned, were Robert and James Turbett (previously Shaw, Turbett, and Co.), J. Carrick, printer; John S. Folds, ditto; Isaac English, William Shaw, printer and stationer; Robert O'Donnell, Joseph Henry Moore, Daniel Egar, James Byrne, printer, afterwards of Gabby-street; Cooney and Rutherford, feather and fur warehouse, afterwards Rutherford of the Mall; William Vaughan and others, some of them very extensive merchants. I will have a word to say specially of a few of those who resided here in the last century and the present. Before the Mall was continued to Gandon Bridge, and widened to the obliteration of poor Drogheda-street, 'The Walk' numbered more houses than at present, and at this demolished end existed for many years the premises of Simon Vierpyle or Verpoyle, stone-cutter. It was to this Vierpyle I believe, sir, that Edward Smyth, the sculptor, was first articulated before he became a pupil to Van Nost. Although intended for the army, in which his father was a captain, young Smyth had an unconquerable taste for modelling, which was gratified by sending him to Vierpyle. Edward Smyth's works, though pretty well known, sir, are not well known. Though his first public work of note was his statue of Dr. Lucas in the old Exchange, he executed several minor works evidencing great taste. The roughest stone in the quarry, under the talismanic touch of the young artist's chisel, breathed life, energy, and beauty. His works at the Custom House, Parliament House, Four Courts, King's Inns, Castle Chapel, and in St. Anne's Church, and other efforts hid in private collections, attest it. Smyth, sir (and I have often said it before) was an ill-requited and shamefully-neglected artist, but he found true friends in the person of James Gandon and Francis Johnston, architects, who secured him works to execute whenever they had a voice in the matter. I do not know in what year Vierpyle died, but he lived to see some of the early triumphs of his apprentice. Vierpyle lived at 41 on 'The Walk' as it first existed.

"Early in the present century Carrick's *Morning Post*, named after its printer and proprietor, was published at 29 on 'The

Walk.' It existed for some years, and was a well-conducted journal. The proprietor's sons succeeded, and the business continued in the hands of the family until lately. Several remarkable letters and communications appeared in *Carrick's Morning Post* during the agitation for Catholic Emancipation and other political movements connected with O'Connell and his friends.

At No. 5 on 'The Walk' was issued the earlier volumes of the first *Dublin Penny Journal*, printed by John S. Folds, son of William Folds, an old-established printer in Great Sand-street, whose business dates back for several years into the last century. William Folds printed the second volume of Hitchcock's 'Historical Review of the Irish Stage' in the year 1794 (the first volume was printed in 1788 by R. Marchbank of Dame-street), and in 1820 he printed Henry Joseph Monck Mason's 'Essay on the Antiquity and Constitution of Parliaments in Ireland.' The elder Folds did a good trade for several years, and in costume and habits kept up to the customs of the eighteenth century.

"I often met several of the early contributors to the *Dublin Penny Journal* on 'The Walk,' full of animation and hope, and not careworn and stooped as I knew some of them years afterwards. Rollicking, genial, and racy, their footsteps were as elastic as their pens, it mattered not whether their calling was the church, the studio, the library, or the lecture-hall. Artist and artisan, churchman and layman, professional author and literary aspirant—all were gay spirits then, though adversity and disappointment overtook some of them in years afterwards. I fear to count their names upon my fingers, as scarcely one may be left to relieve the isolation in which I stand in regard to time and place. O'Donovan, Petrie, Cæsar Otway, Martin Doyle, leaders; Clarence Mangan, the poet; Thomas Ettingsall, the fishing-tackle manufacturer and story-teller; Robert Armstrong, the journeyman house-painter, schoolmaster, artist, and antiquary; Samuel M'Skimmin, the historian of Carrickfergus; Edward Walsh, the poet, story-teller, and schoolmaster, and a host of others, making up the rank and file of the early contributors of the *Dublin Penny Journal* on 'The Walk.'

"Nondescript-quay, you see, is redolent of bright memories connected with the literary, scientific, and mercantile world. It has given birth to many publications and journals, some of which are forgotten and deserve to be forgotten, and others which must be remembered. Nearly thirty years ago, among other literary attempts was one which had for its object the establishing of a newspaper like the London leading one. The paper was called the *Dublin Times*, if I remember aright, and was the first of that name in this city. It came out with a great flourish of trumpets, and was circulated for a while by a lot of red-coated runners, dressed like huntsmen. They sounded their horns, however, with very little effect, for after a few weeks the game was given up, and the *Dublin Times* ceased to be.

"Concerning this paper, sir, and those connected with it, and of other papers and worthies who once lived upon 'The Walk,' I have much to say, as events are crowding back upon my memory. With your acquiescence, Mr. O'Flanagan, I will defer the recital till another visit."

Agreeing to the proposition of our cicerone, we parted for the evening with the "Oldest Inhabitant."

PROPOSED LIGHTHOUSE AT CONNEYBEG, WATERFORD.

THE advisability of constructing a new lighthouse at Conneybeg was discussed by the Waterford Harbour Commissioners at their last meeting. Mr. Henry F. Slattery, in bringing the matter under the notice of the board, said it was well known that the present lightship stationed at Conneybeg frequently drifted from its moorings, and was often found eleven or twelve miles from its proper

position. He held that it was essential to the proper preservation of life and property that every dangerous portion of the channel should have a properly-constructed lighthouse. Mr. J. Kent said that all agitation to have a lighthouse constructed at Conneybeg had proved futile. The matter was one, however, that should be pressed upon the consideration of the Board of Trade. Alderman Commins thought that, considering that the Commissioners of Irish Lights and the Trinity Board had both strongly urged the construction of a lighthouse at that spot, and that the unanimous feeling of all ship-owners and seafaring men, as well as all the underwriters, was in favour of this project, the Board of Trade should at once comply with their desire on the subject. Mr. William Malcomson thought that they should have some nautical opinion on the matter before taking action. The further consideration of the subject was adjourned until the next meeting. The subject is an important one, and we hope the matter will not be allowed to rest longer, but that some decided steps will be taken to effect the object.

STREET ART AND LITERATURE AT CHRISTMAS.

THE Christmas output in art and literature, mechanical and pictorial, in the streets shows but little signs of improvement. The immemorial Christmas Carol, a libel on typography and art, will be heard on all sides in our streets, filling up the intervals of the "holly and ivy" man's shriek. Stalls will line, and are at present lining many of our streets, piled with gew-gaws and gimcrack ornaments; presents of various kinds and of various materials—tin and other metal, wood, papier-maché, clay, delft, plaster of Paris, and other countless compositions—will be moulded into a variety of shapes, commonplace and ridiculous, for not only the pleasure of children but for the admiration of their parents. We do not like to spoil the earning of an honest penny, but we think the sooner the larger proportion of the art and literature of our streets was consigned to the limbo of obscurity the better.

Cannot the turners of Dublin turn out better specimens from their lathes than the wretched wooden money boxes we see sold in the streets? Do they turn them at all, or are they imported from St. Giles's or the New Cut? Have we not wood carvers and stone carvers, and modellers in our midst who can educate the children of the poor by their works instead of debasing them? Are there not artists in wax and metal amongst us to present the poor with cheaper and more artistic forms for their mantelpieces? Has the last of the potters and glass blowers and workers died, and is there nothing for the streets but trash and gilded imposture?

The homes of the poor need to be ornamented and furnished as well as the most wealthy, but the working classes cannot afford to pay high prices for works of fine art. The homes of the poor, however, need better furnishing than they receive at present, and objects that can be bought at a low price. Being cheap they need not of necessity be nasty, for the true artist can invest the merest trifle with a something that is beautiful, ennobling, and instructing. From the artisan's workshop and the artist's studio cheaper objects than are at present to be had can be produced, which can be made auxiliary in the education of our children and ourselves. None are too old to learn, and the grown of this generation need to be taught in many simple things as much as the young.

To artists and artisans, whether they be sculptors, carvers, engravers, printers, pattern-makers, modellers, potters, iron or brass founders, cabinet-makers or turners, we throw out a hint and a seasonable one—Messieurs, do something in your separate lines to elevate the taste of the poor, and make their Christmas time more enjoyable.

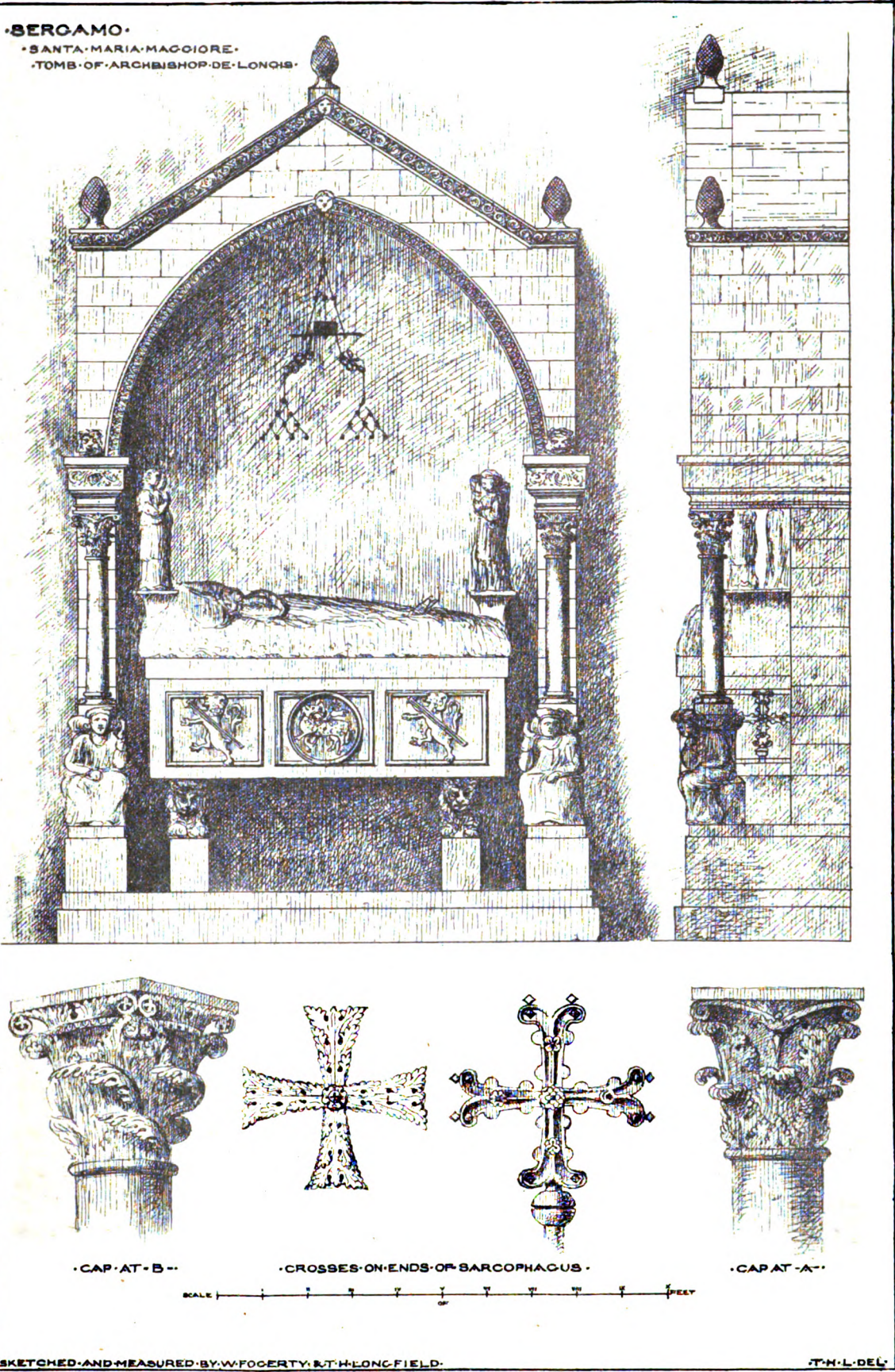
RATEPAYERS' PROTECTION.

THE address of the Dublin Ratepayers' Association is now before the public, and its objects are pretty well canvassed, and there are none who can dispute the statements therein made. It now devolves upon the tax and rate payers in general to assist the association in its commendable efforts to reduce the taxation, and put a check to systematic jobbery. Should the citizens neglect the opportunity, they deserve to be fooled and plundered, and, as a matter of fact, they will be, so long as local rule is administered in its present form on Cork-hill. With the private interests of individual representatives the association has nothing to do; but with the action of the Corporation, as a body, it is the duty of the association, in the interests of the ratepayers, to keep a strict vigilance over its designs and proceedings. The public funds for many years have been used as a milch cow; and, though we do not accuse any single member or officer of the Corporation of putting his hands directly into the public purse, yet we are aware that indirectly it has been done by several to a very great extent. The worst form of nepotism, patronage, and influence has been exercised to promote personal aims at the public cost. Expedients of all kinds have been resorted to to secure an immunity from danger for practices which the law would not only condemn but punish in the persons of the transgressors. We have so often alluded to the evil doings of our Corporate body that it is needless on our part to reiterate them. If the citizens and ratepayers will only rally round the association, and help it to extend its action, they will yet rejoice at the success they have been instrumental in accomplishing. A purer representation and lightened rates, and a more healthy and improved city, are objects worthy of a struggle; and, by the action of a Ratepayers' Association, these and other matters can be brought about in a comparatively short time, if the citizens will only do their duty.

A WORD FOR KINGSTOWN, AND OTHER WORDS.

MR. J. McEvoy, the Chairman of the Kingstown Commissioners, in a recent letter on the Sewerage Scheme for that district, which had to be abandoned for reasons already stated, says:—

"Is it not too much that the Imperial Legislature should throw into the scale further difficulties and discouragements in the shape of exceptionally adverse legislation? Had Kingstown been on the English side of the Channel, the scheme for its improvement would have been heard last session by the Parliamentary tribunal, and for this reason, that the 142nd section of the Towns Improvement Clauses Act, 1847, on which the injunction was obtained, has been repealed in England, and this year the local authorities of Kingstown, if an English town, could have proceeded to carry out the recommendations of Sir John Hawkshaw, by using the powers conferred on English but not on Irish towns by the English Public Health Act, 1872, and that, too, no matter how many or how few 'remoutrants' were to be found in the township. I do not, I think, exaggerate when I say it is a serious public danger to



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permit the continuance of this state of the law, as it argues that British statesmen do not consider the promotion of improvements necessary for the public health and the progress of civilization of equal importance in Ireland as in England; and let me ask on what principle can this policy be defended? We may want denominational schools when other people prefer the undenominational. We may be more given to cathedral building than to the establishment of free libraries, and our patriots may be mere orators, and nothing more, but the laws of health are the same on this side as on the other side of the Channel. Fever knows no distinction of creed or nationality; it kills under the same circumstances in Dublin as in London. Why, then, cannot our legislators enact the same laws for town improvement, and for the protection of the public health in all parts of the United Kingdom? Parliament is over-worked, it is said; why then multiply the number of Public Health and Improvement Acts? The labour expended in passing an English or an Irish act might suffice to pass one for the United Kingdom."

There is much truth in Mr. McEvoy's words, and his greatest foes cannot deny that in his capacity of chairman or citizen he has been a very useful and active member. We hope that he may live to see the anomalies of the law remedied, and witness Dublin and Kingstown as they ought to be with good sewerage schemes, and their local interests honestly represented.

MR. RAWLINSON ON ART.

At a meeting of the Society of Arts, London, on Wednesday evening, a paper was read by Mr. Thomas Whitburn "On Mechanical Processes for producing Decorative Designs on Wood Surfaces." After the reading a discussion followed, and the chairman, in proposing a vote of thanks to the author, said "he thought art should decorate and not smother the object, and he also thought that a considerable amount of decoration was practised now, of which he would say, as Dr. Johnson said of a piece of music which he was told was very difficult, 'Difficult! I wish to God it was impossible.' With regard to Greek art, he thought in trying to imitate this an erroneous amount of injury had been done. Architects had attempted, in this country, to reproduce what was done in Greece, with the materials they had in hand; had tried to copy their forms and mouldings, and to reproduce them in coarse sandstone, and the result had been utter failure. He had been told by a German professor that the Greeks used marble solely or principally because it was good to paint upon; but there were others who denied that entirely, and who maintained that the Greeks never painted the lovely temples the remains of which could now be seen. He thought the time was gone by when they would do much in attempting to copy the temples of Greece. The Gothic style, he thought, was exceedingly beautiful when kept to its own purpose, but its time had gone by. The Houses of Parliament were built in a style which would not last, the stone being undercut in all directions, for this exposed the surface so that the weather got at it, and in a few years it would go to destruction. The Houses of Parliament before they were completed began to crumble; and canopies and pinnacles were falling down now by the cwt., nor could any of the processes which had been employed to stop the decay be considered as successful. In modern art, if they had decoration, they certainly wished to have comfort, and if the architect failed in giving comfort and means of health, he failed in his building. With regard to the special art they were then considering, a means of decorating wood by block painting, it appeared that the wood must be carefully prepared, and the design such that the block should not be fractured by the pressure put upon it to give the impression on the wood to which it was to impart its pattern. In calico printing that was not necessary, the lines being of the most delicate character. In printing our pottery, the pattern was put on to a piece of fine paper, thinner than

bank-note paper, of a very strong kind, and it was simply laid on the article to be printed, the colour being left on the article, and the paper removed by moisture. This art, no doubt, might be employed for cheap forms of decoration, and might supersede in some degree the old style of graining and varnishing, but he could not see any evidence in the patterns exhibited of the same durability as wood, because he thought the ornamentation would rub off."

CIVIC LYRICS.—No. LI.

THE CORPORATE SIT.

The public good is a precious sham!
I know, and others know, what I am.
Had I not served myself with a zeal,
I might have starved for the common weal.
Patriots talk of the filthy pelf;
But, to live, one needs to help himself.
I have a son, and I'm sure he's fit
As others for a Corporate Sit.

My sons were trained in a Christian school,
And each has a taste for local rule;
Can handle a poleaxe or a pen,
And drive a quill or a gang of men.
Look at the eldest one's photograph,
Late "Quick" of the Postal Telegraph.
He needs an office, and will have it,
If plumping wins a Corporate Sit.

What can he do? Now why do you ask?
To tell you all, it would be a task.
What can he do? Why, plenty of things:
He has a taste for the stage, and sings;
He's good at cricket or on a horse,
Can draw a cheque, or a bill endorse.
What is his forte? Why, plenty of wit—
He has to fill a Corporate Sit.

If Calico suited, why not he?
What's Calico's son-in-law to me?
Flesh of my flesh, and bone of my bone,
When charity needs it, help your own!
With forty votes I think I've a grip—
Egad I've the Council on my hip.
Not one of them dares to budge a bit
O'er this I. O. U. Corporate Sit.

The way to govern, 'twixt you and I,
Is to maintain the "Family Tie,"
Notwithstanding and nevertheless
Although you're gibbeted in the Press.
This is my policy, and 'twill be
So with the whole of my progeny.
For turning your coat don't care a whit—
Go ahead for the Corporate Sit.

Follow my advice, my friend; and mind,
Whatever you do, don't drop behind.
Vote for Puffers and Scriven and Scroggs,
And their railway lines o'er moving bogs.
Vote well for Buncombe and Balderdash,
But first, on principle, get the cash.
Don't burn your fingers with Gas, or it
May spoil perhaps your Corporate Sit.

CIVIS.

THE CORK STONECUTTERS, AND THEIR UNRIGHTEOUS WRONGS.

It is almost needless for us to state here that we have always advocated in our columns the paramount claims of native art and art-workmen to the patronage of the nobility, clergy, and all who may be entrusted with the disposal of funds collected for any special purpose. We have often been compelled to be severe upon the clergy for their persistence in sending away money which, collected from the people, should be spent amongst them, and for their ultimate benefit. With these brief remarks we here introduce a few extracts from a letter received as we were going to press, and to which we earnestly direct the attention of "Home (?) Rulers" and those who wilfully and criminally pass over artists resident in Ireland. Perhaps a monster petition and a monster conference in the "Round Room," would effect some good. The letter has been addressed to us by the secretary of the Cork Stonecutters' Society; our space will not permit us to print it in *extenso*. Complaints of grievances similar to

that stated in the letter before us are not uncommon in our city:—

THE HIGH ALTAR AND TABERNACLE FOR THE CHURCH OF ST. FINN BARRE (SOUTH PARISH.)

SIR,—The clergymen of the South Parish have announced that they have ordered an altar and tabernacle for the South Parish Church, to be executed in London, and that they require a sum of about £280 to make up balance due at foot of the contract. This announcement has caused a considerable amount of indignation in the parish and surprise outside.

When some months ago the Nuns of the South Presentation Convent brought over an altar from England, the price of which was in greater part, if not entirely, collected in the parish, we refrained from exposing the act, as we did not wish to give pain to the ladies of the convent, being certain the arrangement was not altogether theirs. Outsiders may think we could not execute work of this class, and as citizens protest against sending money needlessly out of the country. We naturally ask, why was this work handed over to Englishmen when employment is so badly wanted at home, when a large number of our body are walking the streets in enforced idleness, their families wanting bread? We can see none, and do not wish to give expression to our feelings, or to the just indignation of the subscribers and parishioners.

Persons unacquainted with the trade in Cork will ask are the Cork operatives capable of producing work of this class to a sufficiently high standard of merit? Can the Cork employers supply such work as cheaply as London firms? In answer to the first I need only refer to works already executed in Cork by Cork men, besides many others in Ireland, any of which will bear most favourable comparison with imported work in point of artistic merit, skillfulness of execution, durability, and taste in the selection of the materials employed. In answer to the second query, the priests did not give the Cork employers an opportunity of tendering. The latest instance of competition is that for the high altars and baldachins for Pope's Quay Church. London and Cork firms competed. The Cork tenders were lowest. The work was finished at home, and now stands a credit to all connected with it. In the face of these facts we ask—we demand—an explanation!

It certainly is anomalous that at this time when one firm in Cork is executing three marble altars and other work for America, and a large piece of work of a similar class for South Africa, that Cork priests consider it necessary to import work similar to that which foreigners seek from us.

Now, sir, we want to know why the sense of the parish was not taken on the subject? Were the committee appointed by the subscribers kept in ignorance of the transaction? Why such a course was taken, contrary to the known feelings of the parishioners? Why the money was sent out of the country, contrary to the first law of political economy? Why have the skill and claims of our citizens been ignored? and why has the fundamental principle of Home Rule been so violated, in ignoring the known merits of Irishmen, and calling in others to do what we not only can do for ourselves, but what we actually have done, and are doing, for Englishmen and for foreigners.

John Hogan, a sculptor, one of Ireland's most gifted sons, was frequently advised to leave Dublin, and settle in the metropolis of the Empire. With a patriotism that did him honour, he refused—though he well knew that in a pecuniary point of view it would be immensely to his advantage. His "Dead Christ" lies under the altar of the South Parish Church. If, for no other reason, could not an Irish frame be found to clothe his immortal work? Why so insult the memory of our illustrious dead?

Apologising for taking up so much of your valuable space, and hoping this will call forth an explanation, I remain, &c.,

THOMAS BARRY.

DRAINAGE WORKS.

THE Baltracree River Drainage Works, Co. Kildare, extending to over twelve miles, have been completed in the most satisfactory manner by the contractor, Mr. Dixon, under the superintendence of Mr. James Dillon, C.E. We believe we are correct in stating that the time allowed has not been exceeded, although several bridges had either to be rebuilt or underpinned. Works of such practical utility to this country and its labouring population are much to be desired. We are aware that others are being talked of.

THE MAIN DRAINAGE SCHEME AND ESSEX BRIDGE.

In the debate that took place in the Corporation on the estimates for 1874, the Main Drainage Scheme came under consideration. The following summary of the proceedings will edify our readers:—

Mr. Norwood said the rate for the coming year would be 2d. in the pound. This year the rate was 4d.; half that amount would suffice for the operations of the coming year. He proposed the adoption of the estimate.

Sir John Gray seconded the motion.

Mr. French opposed the motion. He said already several thousand pounds had been raised, but no work had been done except the making of a short culvert. No contract for drainage works had as yet been entered into, and he would therefore divide the Council on the question of raising a rate.

Mr. Dennehy also opposed the motion. It was not intended to apply the rate strictly to main drainage purposes, and that, in his opinion, created a legal difficulty. The Corporation plans had fallen to pieces, and it was found impossible to carry them out, owing to the enormous cost they would entail.

Mr. Byrne said that, so far from falling to pieces, the plans would be carried out in their integrity, but that cheaper materials than were originally contemplated would be used. It was intended to carry the main drain under water at Essex Bridge, and the plans were drawn so as to facilitate at the same time the work of widening the bridge and the quay at each side of it for some distance. All they asked for now was a sum sufficient to pay for the completion of this portion of the sewer. The Corporation would carry out this part of the work irrespective of any contract that might be made hereafter as to the drainage of the city.

Mr. Tickell thought the citizens should be much indebted to the Corporation for the care they had taken to prevent any increase in the taxation, and he hoped the merchants and citizens carrying on business in the neighbourhood of Essex Bridge would not be inconvenienced by the want of a bridge for a longer period than was necessary.

The Hon. Mr. Vereker thought the rate an imprudent one. If £6,200 was required to construct a small piece of a drain at Essex Bridge, the citizens might fairly ask how much would the drainage of the entire city cost? He thought it was conceded on all sides that the original drainage scheme had failed, and in any new scheme that was adopted what guarantee would there be that these drains which they were now constructing would be utilised at all? Could the bridge not be constructed in such a manner as to enable culverts to be made hereafter, if they were required?

Mr. Norwood hoped the house would not be led away by the ill-advised observations of gentlemen who did not know anything of the subject on which they spoke. The work of constructing the bridge was being pushed forward rapidly by Mr. Doherty, and it was hoped that the bridge would be opened on the 1st October next. The construction of the drains was also going forward actively. If the Corporation refused to pass this rate they would be guilty of a breach of faith with the Port and Docks Board; for, in consequence of a deputation from the Corporation that waited on that board last year, they had actually altered their plans for the rebuilding of Essex Bridge with the view of facilitating the construction of these culverts. In any system of drainage that might hereafter be adopted these culverts must be used. The sum asked for would be a mere bagatelle when compared with the advantages that would arise from the widening of the quays alone.

In reply to Mr. Dockrell,

Mr. Norwood said the two-penny rate would only produce a little over £4,000, but the balance from the previous year would make up the remainder of the sum required.

Mr. Bury objected to the levying of any further rate until they saw some real results from the rates already expended.

Mr. Byrne explained that the sum now asked for was only what was necessary for the work of widening the quays at either end of the bridge.

Mr. Dennehy denied that the contractor who was building the bridge was doing any work for the Corporation. He had no estimate of the Corporation before him at all.

Mr. Byrne said the Corporation had full power (if they thought fit) to enter into a contract with the Port and Docks Board to carry out the whole Main Drainage Scheme.

Of course the motion was; carried and among the other strenuous supporters we need not point out particularly the individuals who are specially interested—interested, not

in the sense of the public benefit that is to be achieved by carrying out the project. Each and all of us should feel an interest in the prosecution and completion of a well-matured Main Drainage Scheme, but have we not seen already how the affair has been bungled, and, as a consequence, collapsed?

We would like to know to what extent is Mr. Norwood better informed of the practical and engineering features of the scheme than Mr. Vereker. On the law of the subject, we have no doubt he knows a thing or two, and will be prepared to speak if called upon to give his evidence before a Parliamentary Committee. He is equally at home in his knowledge of the gas question, and no doubt next session his services will be availed of when witnesses are being hunted up in London, who are living in hopes for several months past.

Really it is time that a stop should be put to the expedients resorted to at the City Hall to carry out schemes fraught with mischief to the community and profit to individuals.

At a previous meeting, which was no doubt well packed, as patronage was to be distributed, the members numbered fifty-five out of sixty. They are generally up to time when a "job" is to be done, but the occurrence of a thick mist or a shower of rain is put forward as a valid excuse on other occasions when an average meeting cannot be had.

The new Essex Bridge, the public are informed, will probably be opened in October next year. Were the architect who constructed the old bridge 120 years since, alive to-day, he would have completed the structure within twelve months. When we remember what he performed in the eighteenth century in two years with the few mechanical appliances then available, there cannot be the least doubt that, with no foundations to lay, he would be ashamed to keep the public without the use of the bridge over one year. Perhaps we do not know—

"The hills that will environ
Those who meddle with cold iron."

THE OLD BUILDERS: THEIR METHODS AND MATERIALS.

Being Extracts, with Notes, from "Building in Water," by George Semple, Architect.]

As Semple only took a cursory view of the coast from Ramsgate to Dover in 1752, and based his plan on mere personal inspection without any correct soundings or borings his proposals and design must not be judged at this date with a too critical eye. When allowances are made for the difficulties that stood in his way, his plan on its simple merits alone is entitled to a favourable consideration. We deemed it in consonance with the subject to bring his long-forgotten plan back for a moment on the page of building history, as one of our old Dublin Architect's works is now undergoing a demolition, with the exception of the foundations, after an existence of nearly 120 years. We will now produce a few further remarks in relation to his

PLAN FOR A HARBOUR IN THE DOWNS.

"1. First set out in a direct line from the most promising place on the shore till you come to six feet deep at dead low water, and that determines the site of letter D [the port head]. Then proceed in the same direction till you come into twenty feet of the like water, which gives you letter A [the mouth or entrance to the basin]; and herein observe that the extent of A from D is just equal to 4,396 in the clear; but I presume that it would be infinitely better if A and D were double, nay treble, that distance from each other, for this very important reason, because the merchants of London would be better accommodated with a convenient number of store-houses, to preserve both their foreign and domestic commodities, according as their different occasions might require, without giving the least delay to their ships or men, by which means this port would not only

prove a place of safety, but, among numerous other advantageous, it would answer extremely well as a moat or noted place to carry on trade with the whole world. For these and many other weighty reasons, I advise you not to be afraid of making the distance two extensive between A and D, for when the basin B [as aforesaid on plan the basin extends 1,856 feet] is furnished the expense of carrying the piers home to the shore will be very trifling in comparison with the yearly value any eminent merchant would put upon one of those lots.

2. I shall now in the second place point out another guide to conduct you to a proper situation for this port, which you will find to be of such a vast consequence, that neither time nor cost ought to be spared to find out and procure it, if possible, and that is a full command of water. I cannot say whether or no the River Stower could be taken up or even part of it conveyed to some convenient place for this purpose, but I have reason to believe that it may, or perhaps some other rivulet may answer better; but be that as it will, I do most earnestly advise you to procure plenty of pure fresh water [the italics are ours, as we deem our old architect's remarks important] sufficient to keep up in the driest season a spacious reservoir contiguous to the river of K [public stores and weigh-houses, custom-house and exchange, &c.], or somewhere to the westward of the port; and from this reservoir to carry two conduits—one through the middle of each quay wall as it were from R to S and from T to U; they must be at least 4 feet wide and 7 feet high in the clear, to be built with well-chiselled stone, in staunch cistern work, as formerly directed; each of these conduits must have a sluice at a reservoir and another near to the extremity of each quay, as at S and U into which the common sucking pumps must be set at every ship's length in proportion to the several depths of water, with proper air-pipes, &c. This, I repeat, will be of such vast use that no money should be spared to procure it. I shall give you but one instance on the whole: suppose a sloop or tender should hove to this port in great haste for ammunition or provision, she might sail up to the magazines, and be instantly loaded, and yet at the same time by the labour of three or four men this pure fresh water can be pumped, and by leather tubes conveyed even into the water hogsheads in the holds; and with all this she might set out again without paying any regard to the tide, or losing the least time imaginable by taking in her loading. I do not in the least doubt but that there will be some political objections made to this design, because, perhaps, this port might at some time contain an immense value of British property, and in time of war be liable to hostilities. In order to obviate that objection, you may, on these principles and methods, erect two substantial forts at L and M, provided you find those two sites [a distance on either side on a line with the mouth of the harbour] of moderate depths, by which I presume this port may be safely protected and channel effectually guarded thereby."

[Semple was very enthusiastic in the matter of a "Harbour for the Downs," which he spent many years of thought upon after his completion of Essex Bridge in 1755. Twenty years after (in 1775), when he published his treatise on "Building in Water," he takes care to dedicate his work "To the King" (George III.), deeming his plan for the harbour in the Downs a more important design than other of his works. The dedication is rather slavish, but greater men than Semple were wont to lay their works, "with the utmost deference and humility," at the feet of not only royalty alone, but at the feet of noble and ignoble lords, who were besought to accept or deign to smile on the works offered for their approbation, and which their patrons knew nothing about. The construction of a harbour for the Downs in the reign of George III. was, no doubt, a subject of importance which the king's ministers, if not the monarch himself, might be supposed

to take some interest. Dedications of authors' works in the old style are now obsolete, and so much the better. To inscribe a volume to a friend or a public man or benefactor of note is still allowable, but mercenary dedications are undesirable. We do not say our old architects were belonging to the latter class, for, although somewhat slavish in style, he did not look for a money consideration, his object being the public good. Semple ends his volume with the following closing remarks:—]

"Thus have I, to the utmost of my capacity, at length gone through the design I proposed, and which I have so much at heart; and if the ends I had in view shall be answered, and those sheets may in anywise conduce to the national welfare and the instruction of young students in works of this nature, I shall be so far from regretting the labour I took in composing, and the expense I have been at in publishing them, that I shall sit down with all the self-complacency that arises from a consciousness of meaning well."

[The cost of printing the volume, and illustrating it with sixty-three copper-plates, was no small item in 1775, and of course it all fell upon the author, as the sale must have been a limited one. The work was printed by John Abbot Husband, 28 Abbey-street; and in Wilson's little Directory of Dublin for 1786 we find the printer was still alive, and occupying the same premises. It was our intention to wind up our notice of our architect's volume with some further particulars of the life, practice, and other performances of the author, although the materials to our hands are scant. We may, however, have another opportunity before long in reverting to the subject again, and will defer further notice at present.

Looking back over our notes in relation to Essex Bridge, and on "Building in Water," we feel that they have been of some utility; and, taken in connection with the extracts, they have served to effect more than one of the objects we had in view—the illustration of the old builders, their methods and materials, and the resuscitation of the name and vindication of the claims of George Semple, architect.]

(Conclusion.)

ASPHALT: ITS NATURE AND USES.*

(Continued from page 322.)

IN consequence of the immense demand, the Seyssel works soon found rivals, and in Alsace especially another similar industry was commenced.

At Pechelbronn (Bechelbronn) and Lampertloch for years there had been known a kind of tar oil floating on the surface of fountains, which had been used for medicinal purposes in many ways, and enjoyed a great celebrity. Rock containing bitumen was first discovered in 1785, and by the same Eirinis who discovered the Val de Travers, he being in that year resident as a private individual in the neighbourhood of Markweller. What he discovered was the head of a lode of bituminous sand, belonging to the tertiary formation, and spread through the Vosges. Eirinis obtained the right of using the sand, and distilled the oil from it in a small laboratory which he built at the edge of the forest: apparently his object was medicinal. The business could scarcely have been profitable, inasmuch as he died without property, and his concession fell to the same M. de la Sablonnière who had reaped the profits of the Val de Travers. It is possible that the mineral tar obtained here may have been employed by the latter, without it being known, for the perfection of the Neufchatel asphalt cement. He certainly at once founded a factory for the production of mineral tar in the stratum of bituminous sand, the process being similar to that adopted at Seyssel. The profits do not seem to have been large, and the association formed by his widow with a M. Le Bel does not appear to have succeeded.

In 1768, however, Madame de la Sablonnière ceded all her rights to her partner, and his family long remained in possession of the mine and factory, which at length began to show a profit. Although situated in Hessian territory, the factories of M. Le Bel enjoyed the privilege of a free introduction for the product into France; and when a new shaft was opened in 1785, an exceedingly valuable property was created; and although it sometimes assumed other forms, the works were from that time uninterruptedly carried on.

About this time a brown coal stratum in the adjacent village of Lobsan began to be worked, and great quantities of it discovered, upon which the owners and managers of the neighbouring saltworks of Sulz, after complying with the necessary formalities, entered upon the business. Among these the salt-work manager, Rosentritt, became prominent by utilising the bituminous sand accompanying the brown coal, and by the discovery of a little-used bituminous limestone. After the termination of many changes of ownership, caused by the Revolution and the war, he agreed with the heirs of M. Le Bel to work all bituminous quarries in common.

These heirs of M. Le Bel do not seem, however, to have possessed much business capacity, for after imitating the Seyssel works on their own estates from 1817, they became bankrupt in less than a year, and in 1820 the quarries and works were sold for the small sum of 80,000 francs to Messrs. Dournay Brothers, who had already lent the establishment 60,000 francs.

In the hands of these skilful manufacturers the Alsatian asphalt trade soon rose to a great height, and as it continually grew in magnitude, Messrs. Dournay Brothers found themselves obliged in 1838 finally to form a share company with a capital of 1,200,000 francs. This event occurred when the Seyssel company, under Count de Sassenay, was at the acme of its reputation, especially in reference to foot pavements.

At this time the long-forgotten quarries of Val de Travers were again thought of—those quarries from which the whole branch of trade had in the first instance originated; and in this matter the intelligent Count de Sassenay again took the lead. He also transferred his undertakings at Seyssel to a large company of capitalists, and turned his attention to the scene of the labours of Eirinis. The reasons for this step he gives in express words, in the May of 1838, as follows:—"When the first samples from the quarry of Val de Travers were laid before me, I was obliged to conquer my conviction that they came from the best part of the rocks of Seyssel, so great is the similarity between them. But although I was struck by the richness of the material, I could not think of purchasing this second quarry without a careful examination of its stratification and the estimated quantity of the substance there to be found. In so important an undertaking I resolved not to be guided by my own experience. I therefore associated M. Henri Fournel with myself in the matter, a gentleman well known for his conscientious hesitation, and, accompanied by this distinguished engineer, I have examined the whole district of Val de Travers. I found that the valley contained an asphaltic rock, identical with that of Seyssel, its grain being somewhat finer, and the yield about two per cent. more bitumen, a quality of the highest importance in a mercantile sense, effecting a great saving in the application.

"This asphaltic limestone is found on both sides of the valley and to a great distance in an uninterrupted series, reaching below the mountains which enclose the valley. In view of the enormous blocks accompanying the course of the Reuss, it is difficult to conceive how the supply can be exhausted."

A Frenchman named Brémont de St. Paul about this time had obtained a concession from King Frederick William III. of Prussia and the government of the canton of Neufchatel, in Val de Travers, suspending all previous concessions, and securing to him the yield of the asphalt pits for thirty years, at an annual rental of 860 livres 10 sols. He

was, however, forbidden to sell this concession; but when the Count de Sassenay determined upon the purchase of the pits, a sale was sanctioned, and a royalty of one-tenth of the net returns fixed upon, or 10 centimes a hundredweight of the rough material. Under these conditions he transferred the concession to the Count de Sassenay, who founded a large company in Paris for the purpose, and obtained for himself the right of free import into France. Thus three great centres of asphalt industry were established, all in the hands of French companies, at Seyssel, Lobsan, and Val de Travers. It was, however, a long time, despite the good reputation in which asphalt now stood, ere pavements of this substance could be introduced into towns at any distance from the centre of manufacture. The public purse-strings were drawn tight when so many square metres of pavement had to be covered with this expensive material. Nor could natural asphalt be delivered, except at a high rate, on account of the distance of Germany and England from the place of production, and although the three companies tried to reduce the price by competition, the cost of transport still remained as a dead weight on the trade.

This not only directly affected the spread of the asphalt trade, but in other ways influenced it in a sinister manner. The price which real asphalt commanded was very tempting, and it was easy to produce imitations of a worthless kind with chalk, pitch, and common gas-tar; and all classes of workmen, even architects themselves, soon learnt to call by the name of asphalt anything which would fuse like pitch—an error which has perpetuated itself to the present day. Hence mastic factories everywhere arose, introducing a fictitious article under the name of asphalt; even masons who had succeeded in producing some kind of fused gas-tar did not hesitate to recommend such a base imitation for the laying of foot-pavements. This, of course, produced grave results in the veritable industry of asphalt. It can never be too often repeated that asphalt possessing its really good qualities can only be manufactured from the natural rock product.

It has been found impossible to imitate the close union of limestone and viscous mineral tar. When chalk or firm porous limestone was taken and boiled for a long time with pure, natural, viscous mineral tar, and then treated like natural asphalt, it was possible to obtain well cast cakes which smelt like those obtained from the asphalt pits. But the pavements laid down with this artificial substance evinced very different qualities in reference to resistance and durability. The union of mineral tar with limestone, which occurs naturally, was evidently the result of a thorough saturation of the limestone by petroleum, afterwards oxydised by the action of thousands of years. Thus these substances are intimately united in a manner that only chemical force can effect; hence it is that neither sunshine nor rain can divest natural asphalt of its bitumen or harden it, and that the veriest outside surface can alone suffer slight deterioration. The mastics prepared from natural mineral tar are also very adaptable for air-tight places, for isolating layers in the foundations of buildings, and for the covering of case-ments and bridge arches; but these must not be exposed to the sun, must not be used for pavements, as they are liable to great waste by the action of the elements. Still, they are far better than the bad mastics so frequently recommended by interested and inexperienced persons, having common gas-tar as the chief ingredient. These generally fell to pieces in a very short time, even when they had been subjected to very little traffic, the oils of gas-tar being too volatile, the pitch too friable, causing the pavement to be too soft in summer and falling to pieces in the winter. The disrepute caused by the introduction of these bad imitations has had a sad effect upon the trade in real asphalt, and important works have thence often been carried on at a serious loss.

The extension of the railway system, and

* From a paper by Dr. L. Meyn, in the *Practical Magazine*.

the discovery of new deposits, has, however, to a great extent, put an end to this state of things. Since railways have branched out over the whole of civilised Europe, it has been possible to deliver asphalt in the interior of Germany at the coast at far less cost, and the increase of knowledge on the part of engineers has forced the imitation article out of the market, at least in great public works.

In 1843 Mr. Henning opened a bed of asphalt at Limmer, near Hanover, in the heart of Germany. This stone is a limestone filled with shells, and completely saturated with viscous mineral tar belonging to the upper Jura formation, and is in quality and age quite similar to the asphalt of Seyssel and Val de Travers, both in chemical constitution and origin, so that there can be no distinction made between the French and German asphalts. In outward appearance, and when cut with a knife (under which circumstances it looks like chocolate), it is exactly like stones from the Jura mountains. It is therefore prepared for pavement in a precisely similar way. It is broken and reduced to powder in a mill, melted up with some mineral tar formed into cakes, which are sent to market, and are afterwards treated as are the French, Swiss, and other asphalts. In consequence of this discovery the name of Limmer was soon blazoned on footways beside those of Seyssel, &c.; entering into competition with the older pits with success, especially as the richer quality rendered the article cheaper. At the first London Exhibition the Limmer asphalt received preference above the other sorts, and the name of "German asphalt," which had formerly been a term of reproach affixed to the base imitations—Germany having no asphalt pits—at length became a designation of honour. The handsome and spacious footways of the city of Hanover bear testimony to the excellence of the material.

(To be continued.)

TYPOGRAPHICAL BENEVOLENT FUND.

THIS fund, established some three years ago in this city, is certainly one of the many that deserve a fair share of public recognition and support. It was started by the operatives themselves, for the purpose of relieving their brethren "overtaken by physical infirmity; the sustenance of the widows of compositors; and the providing for the orphans of men whose lives had been passed in working out the practical purpose of art, science, and literature."

It is gratifying to find that through the exertions of the committee a large addition to the subscribers' list has been made, and the patronage of Earl Spencer obtained. Although a few urgent cases have already been relieved from the fund (and which the Committee could not refuse), they still are anxious to carry out their object of "first collecting a fund sufficient to realise a permanent income, before they can give effect to the main object of the Institution by granting pensions."

The fourth annual concert was given on Monday evening last, in the Rotundo, and we trust the result has been satisfactory.

CITY IMPROVEMENTS—CENTRAL STATION—GRAND "NOTIONS."

Mr. Henry O'Hara, C.E., has been addressing our contemporary the *Daily Express*, for the purpose of ventilating his ideas of a central station, and a grand thoroughfare to connect the Rathmines district by a continuous line with the Broadstone station. This he would accomplish by demolishing all the dilapidated houses standing in the route, and which would not cost much! He proposes a central station at west side of Parliament street, which street is to be made as wide as Sackville-street! The eastern front of the station is to resemble Charing Cross Hotel and Station. As we propose in a

future number to look into the question of a connecting city railway and a central station, we leave Mr. O'Hara and his "notions" for the present. We would like, before such monster works are even broached that the trifling work of opening up Dame-street to Christ Church had even a remote chance of being accomplished in this generation.

ECONOMY IN THE USE OF FUEL.

At the first ordinary meeting (120th session) of the Society of Arts (London), the chairman, Major-General F. Eardley-Wilmot, R.A., F.R.S., delivered a lengthened address (fully reported in the Society's *Journal*) from which we extract the following with reference to fuel:—

"The growing importance of economy in the use of coal led, during the last session, to the placing in the hands of the council by a gentleman, through Sir William Bodkin, of the sum of £500 in aid of a solution of this question. A list of premiums in connection with it has been published in the *Journal*, and the council are expecting a large number of stoves and grates for the competition which will take place after 1st December next. It has been necessary to have a building specially erected for the trials, and it is hoped that, as regards domestic purposes, the desired economy will be secured without any but slight alterations in existing fire-places. It does not speak very highly for the skill of the builders or of the grate manufacturers that, with few exceptions, houses are found to require the unsightly rows of chimney pots, cowls, or other contrivances that disfigure our buildings.

"The economical question is one that affects the whole community directly in relation to this necessary of life; but there is one point of even more importance in a national point of view, namely, what will be the effect of the continued and increasing high price of coal on the industry and intercourse of the people of this country? This question has been discussed by many able men, and though there may be differences of opinion on it, there is one practical conclusion which is forced on all who consider it, and that is not merely the more economical use of what we possess, but the importance of seeking elsewhere than in coal for some source of power which can be economically applied, and with an equal or greater result. Gas and air engines, though employed for stationary engines where great power is not required, are not applicable to locomotives; but it may be inquired whether among the earth oils, now so abundant and cheap, or the highly explosive compounds—as gun cotton—so largely used for other purposes, generators of force adequate to the traction of railway trains could not be found. The Society has offered the Howard prize of £25 or its gold medal in connection with this subject as follows:—For the production of a traction engine of moderate power, capable of being employed as a substitute for horse-power on tramways and in the streets of cities and towns. The engine to form one structure in combination with the tramway carriage. The power may be generated by any means, provided that noise, noxious fumes, and the discharge of refuse into the air or on to the road surfaces are avoided. A second gold medal is also offered by the society for the discovery or manufacture of a means for safely and economically generating power suitable for use in place of steam. It should be free from refuse, noxious fumes, and injurious effects either on the metals with which it may be brought into contact, or on the workmen employed.

"The utilisation of peat, owing to the high price of coal, is naturally attracting a considerable amount of attention at the present time, and the Irish Commission appointed to investigate the peat question recently visited the principal peat manufactories, both at home and on the Continent. Peat and its profitable and economical utilisation for some of those subjects which have constantly

occupied the attention of the Society and it is much to be regretted that, up to the present time, no large commercial results have been obtained from so important and extensive a natural product. The question has formed on several occasions the subject of premiums offered by or through our Society; and on the last occasion, in 1865, Mr. J. Bailey Denton placed at the disposal of the council the sum of £50 as a money prize, to which was added the Society's gold medal, for the production of fuel from peat which shall be equal in quality to good household coal for ordinary purposes, and capable of being sold in the market commercially at less cost than such coal; but I am sorry to have to add that the Society has been unable to award the prize. The attainment of the object was to be demonstrated practically, and on a commercial scale. Papers have been read in this room upon the same subject, and samples of coal and peat-charcoal in endless variety have been exhibited. Inventors have been many, and of the most sanguine temperament; large sums of money have been from time to time expended in attempts to work the almost inexhaustible bogs of Ireland, as well as others in this country; but hitherto no commercial result of importance has been attained. The Irish Commission last year, in their report, state that the only reasonable system of producing peat fuel upon a commercial base, is by macerating the raw peat, and in the air-drying process, aided by the use of sheds, a process long since published in the *Journal* of our Society; and it is to be hoped that the company now forming, and which is stated to have purchased of our royal president the right to work upwards of 1,000 acres of peat land in Devonshire, may prove more successful than its predecessors have hitherto done."

SPURIOUS TEA.

ON the occasion of a deputation waiting on Mr. Stansfield, at the Local Government Board, London, on the 6th instant, to urge upon the Government the necessity of taking immediate legislative action to put a stop to the importation of spurious teas into this country, Dr. Letheby produced a sample taken from one lot of a million pounds. It contained 44 per cent. of sand, iron filings, and colouring matter; and on applying his magnet to it, the whole of the so-called tea was attracted. Dr. Letheby said that good tea did not contain more than 5 per cent. of mineral matter. He showed another sample of inferior tea composed of exhausted leaves. There was one district in Shanghai where this was manufactured for market, and the kind was known as "Mayune tea." He next exhibited a sample taken from a vessel called the "Washington," wrecked on the American coast. The tea had been in the salt water a considerable time; it was re-dried, but the American authorities having condemned a million and a-half pounds of it, the tea was sent over here, and ninety chests were sold.

GAS IN LONDON.

AT the last meeting of the Metropolitan Board of Works, the Works Committee brought up a report recommending that the Gaslight and Coke Company be informed, in reply to their letter, inquiring whether the Board is disposed to agree with the company for an increase in the price of gas in order to meet the extraordinary expenses of the year 1874, that the Board cannot agree to their suggestion, but will be compelled to oppose any application which the company may make for an increase in the price of gas. Mr. Newton, in moving the adoption of the report, said that the recommendation of the committee in this matter had arisen in consequence of an application which had been made by the Gaslight and Coke Company. Under the circumstances, he said, the committee felt that the Board ought not to allow a further increase in the price of gas without

setting up a most determined opposition to the claims of that company. He believed also that the Board ought not to agree to a continuation of the present price of gas, but thought there ought to be a considerable reduction in it. He did not believe in the reasons put forward by the companies for the increase of the price. True, coal had risen; but, on the other hand, the price of the gas products and of coke had gone up in a corresponding manner. Therefore, he was sure the Board would be justified in offering the strongest opposition to the proposal of the company to increase the price. Mr. Watkins, in seconding the motion, said a few years ago he bought coke from the Imperial Gas Company at 8s. per chaldron, but the price was now 80s. and 82s. Mr. Leslie hoped the Board would go before the judges of the land and protest against the imposition of the gas company. The average price of the coal used by the company for the present year was £1 8s. 6d. per ton, and that of the gas products 10s. 9d., thus reducing the price to 12s. 9d.

THE TUATHA DE DANANN.

THE "Tuatha de Danann" (writes a correspondent of the *Coleraine Chronicle*) were not Israelites; they were Cimbrian Celts. Irish tradition and Irish history trace them to Denmark, the ancient country of the Cimbri. Dan, or Danann, is the ancient Celtic name of Denmark. It means simply land or lands, and is from the root *tan*, land, found in Britain, Aquitania, and in so many of the ancient names of provinces in Spain. Danann, lands; so called because Denmark consists of several islands and a peninsula, in contradistinction to the intervening sea. The modern name, Denmark, is compounded of the Celtic root *tan*, or *dan*, land, and the Teutonic root *mark*, country. Danes were distinguished from Norwegians by the Irish and Scottish Highlanders of the middle ages as *Danfhir*; the common name for both Danes and Norwegians being "*Lochlan-naich*." According to classical writers, the Cimbri were great sea rovers, as their mixed descendants the Danes and Norwegians were at a subsequent period. They and the Belgae were the same tribe of Celts. Centuries before the Roman invasion they seized upon what is now called Northumberland and Cumberland, and thence extended themselves into Wales and Scotland. From them the Welsh are called in their native language *Cymry*, and their country *Cymru*. On the banks of the Clyde they were known to classical writers by the name *Darnnū*, and by the same name in the north-east of Ireland. From North Britain they passed into Ireland, and became the dominant people in the north-east of the country. *Darnnū* is a classical corruption of *Danann*, the name by which they called themselves, and by which they are known in Irish history and tradition. *Tuatha de Danann* means People of *Danann*, or Denmark. Irish history, tradition, and popular tales ascribe to them the same characteristics as are ascribed to all the Cimbrian tribes by classical writers—that is to say, they dealt in enchantment and magic, and excelled in poetry and music.

WHAT DOES THE HOUSE CONTAIN?

It has been said that a house is to its possessor an epitome of the world, as within its walls we desire to have everything that is useful, ornamental, scientific, and curious; and because every man, for the furnishing and adorning of his home, as of his mind, "selects by instinct that which assimilates with the course of his own previous occupations and interests," we have in a well-furnished home the most reliable clue to the sympathies and character of its owner. The wealthy lovers of peaceful luxury and ease, idle their tranquil lives away in sumptuous nests of downy cushions, tended by all sorts of ingeniously contrived ministering domestic appliances and conveniences. The studious

fill every nook with well-filled bookcases. The artistic delight in surrounding themselves with beauty in all its varied forms. The antiquarian crowds his house with relics of past ages; the curious collector converts his into a museum; while the vulgar rich, whose minds have lost all sense of refinement, nobility, and beauty in the greed of sordid lives, delight in gaudy colours and over-ornamental "showy" furniture; revealing to every observing eye at once their pride of purse and want of taste. It is to gratify the avarice and passion for display of these very common superior people that our manufacturers produce legions of furnishing articles which associate with an overpowering degree of seeming splendour and richness the meanest materials and the most contemptible workmanship. For them are the carved and gilded, silk, satin, and velvet upholstered chairs, not made to sit upon. For them are the gorgeous couches and sofas, of which the fragments so soon disfigure the floors of their demonstratively carpeted drawing-rooms. For them are the glittering and shining inlaid tables on which nothing heavy must be placed; the hangings of gleaming cottons which imitate silk; and all those numerous other cheap-dear, tawdry things which are so extensively manufactured to gratify false taste and sham luxury, and which go forth to impress the senses and feelings of thousands,—missionaries in the cause of ugliness and meanness,—doing an amount of real mischief, the extent, nature, and ramifications of which could scarcely be described in a volume. It is not part of our present business to trace out such evil influences, nor to show how largely they enter into the question of our social happiness and comfort, but we are most desirous of making more common in homes of every class that "rich diversity of joy" which springs from the perception of beauty.—*Furniture Gazette*.

BOGUS DIPLOMAS AND DEGREES.

On several occasions we have directed attention to bogus diplomas and degrees that are flashed in the face of the public in this city on the part of medical quacks and others. The following extract from the *New York Times* may further help in exposing the nefarious practices resorted to to impose upon the public:—

Mayor W. S. Stokely, of Philadelphia, has been informed that the State Supreme Court has issued a writ of *quo warranto* against the so-called "American University of Philadelphia," returnable at the next session of the court in that city. The legal authorities state that the evidence so far elicited will warrant a decision from the Supreme Court suspending the business of the university entirely. The concern never had any reputation but a bad one, and its notoriety has disgraced Philadelphia, and injured excellently-conducted medical colleges of the city. Two years since the charge that the proprietors of the institution were carrying on a criminal trade in diplomas was presented to the State Legislature. On the evidence adduced at that time the legislative body annulled the charter that had been granted. Subsequently the Supreme Court decided that the legislature did not possess the right to revoke charters, and that all alleged illegally-conducted corporations were entitled to a trial. The university then escaped the result of its bogus-medical certificate traffic, and the present procedure of the Attorney-General was rendered necessary. The institution is now generally condemned, and it is alleged that the mayor has obtained conclusive proofs of the frauds that have been perpetrated. Lately the operations of the "American University of Philadelphia" have been in various parts of Europe, where the appointed agents have advertised the diplomas for sale. Parties connected with the concern have also been at work in the West, and it is stated that numerous persons are practising medicine on these bogus certificates in the Western cities. One of the recent cases heard of in Europe is that of an Englishman, He bought, it is said, the degrees of M.A. and LL.D. from a person in London, and from the letters in possession of Mayor Stokely it is discovered that he gave £15 for a diploma. The purchaser of the bogus document had addressed the dean and had received an answer, which stated,

"Everything will be properly attended to, and your name duly registered in the books of the university." It is stated that there are still graver charges to be made against the university. Dr. Buchanan, the "dean" of the "American University of Philadelphia," was recently before the City Police-court in a baby-farming case, and narrowly escaped conviction. In the circulars which are issued by the "dean," and scattered throughout Europe, it is stated that an hospital is attached to the medical department, and this is supposed to be the baby farm of the establishment.

In some of our daily and weekly papers advertisements may be seen constantly from London imposters, some of whom have been already convicted of fraud, and we could point at a case or two nearer home of quacks practising on the treadmill to the benefit of the public health.

HOME AND FOREIGN NOTES.

A special general assembly of the Chamber of Commerce has been convened for Monday next, to discuss the merits of the Dublin City Junction, Rathmines and Kingstown Railway Bill.

THE ROSSE TESTIMONIAL.—Shortly after the demise of the world-renowned astronomer, the Earl of Rosse, the people of Parsonstown—where he erected the wonderful telescope which has rendered his name and town famous—decided on erecting a monument to perpetuate his memory. A large sum of money was subscribed, and the contract given to Mr. Foley. The pedestal is now nearly erected, and the beautiful site chosen for the monument (John's Mall) is being rapidly prepared for its reception. The stone used for the pedestal is a hard granite to be found only in the County Cork, and it is now being hewn into shape under the direction of Mr. Edward Sharkey, Parsonstown.

LEICESTER-SQUARE, LONDON.—This once famous but for many years notorious spot is likely to be soon improved. It has been long a scandal to the English Metropolis. A meeting of the principal inhabitants and others interested was held last week to take into consideration the effect of the injunction obtained in the suit of "*Webb v. Tulk*," by which the defendant was restrained from building upon the enclosure, or permitting to remain a hoarding which had been erected around it for advertising purposes. The chair was occupied by Mr. Bickers, the chairman of the improvement committee, who opened the proceedings by referring to the terms of the Chancery decree, which he said compelled defendant to remove the objectionable hoarding within one month, and to erect a fence similar to that which existed in the year 1788. The judgment, moreover, set at rest the question of the value of the land, which for building purposes had been estimated at £50,000 but was now reduced to £500. He suggested that the meeting should appoint a deputation to wait upon the Metropolitan Board of Works on Friday, and urge that body to take action upon the judgment obtained against the freeholder, and either to purchase or by means of a short act of parliament obtain powers to deal with this eyesore of the metropolis; and he concluded by formally moving a resolution to that effect. The motion having been seconded by Mr. Brown, a discussion ensued, and several suggestions were offered, one of them being that the committee should negotiate for the purchase of the square on behalf of the inhabitants, who would then be able to appropriate the space as they pleased. M. Vargues, of the Hotel de l'Europe, complained of business losses occasioned by the disreputable condition of the square. The resolution was ultimately adopted, and a deputation appointed.

INSTITUTION OF CIVIL ENGINEERS (LONDON).—At the meeting on Tuesday evening last a paper was read by Mr. J. Prestwich, F.R.S., "On the Geological Conditions affecting the Construction of a Tunnel between England and France." He considered that a trough of London clay from 300 ft. to 400 ft., or more, in thickness extended from the coast of Essex to the coast of France, and, judging from the experience gained in the Tower Subway, and the known impermeability and homogeneity of this formation, he saw no difficulty, from a merely geological point of view, in the construction of a tunnel, but for the extreme distance—the nearest suitable points being 80 miles apart. Granting the possibility of the work in a geological point of view, there were great and formidable engineering difficulties; but the vast progress made in engineering science during the last half century, led the author to imagine that they would not prove insurmountable if the necessity for such a work were to arise, and the cost were not a bar.

SANITARY AND OTHER NOTES.

As Christmas draws nigh, our local authorities seem to have little time to devote to sanitary matters, being personally interested in other affairs. There is nothing calling for special notice. There are plenty of the old year's nuisances unremoved, which are likely to remain untouched until supplemented by the new year's quota. One of the greatest nuisances we are hearing, and are likely to bear for some time longer, is the incubus of an incompetent and jobbing Corporation.

THE MILK DOCTORS.—At the Northern Police Court on Saturday a number of milk dealers were summoned for practising the harmless fraud of stretching out their fluid by the addition of a *leetle* of the Varttry. In eleven cases in which fines were imposed, the innocent addition varied from 16 per cent. up to 100!! The latter was arrived at by Mrs. Anne Wilson, 91 Mecklenburgh-street, and in marking the fine the magistrate said—"I shall soon have no margin at all left below the maximum £20. You are the most enterprising trader in milk I have yet had before me. I shall fine you £18." The total fines amounted to £83.

DROGHEDA.—We learn that in this town during the past week several fresh cases of zymotic diseases, measles, and scarlet fever, have broken out. The parochial school of St. Peter's has been temporarily broken up; twenty-three cases of measles occurred amongst the pupils. From like cause has the infant school been closed for a time. The residences of these pupils generally lie in the localities complained of as being totally deficient in sewerage accommodation. In the Bluecoat School scarlet fever has broken out, and some of the pupils have been removed to hospital. This school lies in the immediate vicinity of the Christian Brothers' schools, the want of sewerage accommodation to which has been justly described as scandalous. Some fatal cases of croup have occurred in this town. The report of the Local Government Board's sanitary inspector is anxiously looked forward to.

BRAY.—At a meeting of the Bray Commissioners the subject of the proposed tramway between Bray and Enniskerry was brought forward. Mr. Barrington, the chief promoter, had requested the co-operation of the board and a consent to run the rails over the Quinsborough-road through the town of Bray. The chairman said it would be desirable to confine the consent of the board, with regard to the motive power of the proposed tram cars, to horse power, reserving the right to prevent steam or other power being used. With regard to the route of the tramway through the township, he held that the running it up the Quinsborough-road would be ruinous to Bray, and would be specially dangerous as involving the passage up and down the heavy descent at Bray bridge. Mr. Breslin also held that the route proposed would injure the fashionable traffic of the township, and lead to accidents. Mr. Dufresne thought a backward route down by the river side would be the best for the township. Mr. Bruce and Mr. Burke held contrary views, and stated that the trading interests of Bray would not be advanced by running the tramway along the slob at the river side. Finally Mr. Breslin proposed, and Mr. Doyle seconded, a resolution negating the Quinsborough-road route. The resolution passed by a majority of five to two. The position of the commissioners with regard to water and gas under the new proposed bills of the Dublin Corporation was next discussed. After some conversation it was arranged that a committee of the board should wait on the Dublin Corporation and the Alliance Gas Company. A proposal made by Lord Brabazon to erect a handsome fountain at the head of Bray Main-street, provided the commissioners would give a supply of Varttry water for it, was accepted with thanks.

STREET OBSTRUCTIONS.—At the Bray Petty Sessions on Saturday the cases of obstruction against William Brophy and Denis Dorney, brokers, in the main street, were again brought forward. Mr. G. Keogh prosecuting and Mr. J. K. Toomey defending. After a lengthened hearing, the bench decided on dismissing five of the summonses for want of jurisdiction, and inflicted fines in the other three cases of 2s. 6d. each, and costs, to enable the parties to have a case stated in the Queen's Bench.

KINGSTOWN.—At the monthly meeting of the Commissioners, the clerk's report was read. It stated that the mortality in Kingstown during last month was 17 per 1000 of the inhabitants. The report on the solicitor's law costs for the past four years, inclusive of parliamentary costs, showed the expenditure to have been £7,023. The water supply during the last month has been 5,000 gallons daily. The surveyor recommended that the attention of

the Dublin Corporation should be called to the insufficiency of the pressure of the water supply, which was resolved upon. The town clerk was awarded £25 for assisting at the local revision of voters' lists. The question of constructing sewerage works in the township, under the clauses of the Local Government Act, was referred to a committee to meet specially to consider the subject. The erection of a slaughter-house, at Glashtule was negatived.

NEWRY.—An indignant ratepayer ventilates his opinions on the markets in course of construction in this town, in a letter to the *Telegraph*. He writes: "I have heard for some time back both rich and poor speaking very disparagingly of the new butter, egg, and vegetable market now erecting in Market-street; but as I never like to give an opinion on a half-done job, I waited till I would see what it really would be like. A more absurd building for the purpose for an increasing town like Newry I never saw before—it is neither round, square, nor oval. It spoils the appearance of the street, obstructs the thoroughfare, shuts out the light of heaven from the unfortunate inhabitants of the locality, and as to size you could scarcely whip a cat in it. Such a waste of public money in this heavily-taxed town is disgraceful. The butter, egg, fowl, and vegetable market for a town like Newry, even at its present population, and without providing for a probable increase, ought to be at least four times as large as this 'abortion.' Before going further, there ought to be a public meeting of the inhabitants to protest against this waste of public money in erecting a building utterly unsuitable for the purpose, and which is obstructing and spoiling one of the principal thoroughfares of the town. If a man builds a 'folly' and pays for it himself it is all right, but no man should be allowed to do so with the money of the ratepayers."

TO CORRESPONDENTS.

CHRISTMAS IN OLD DUBLIN.—The following record is preserved amongst the MSS. of Robert Ware (not Sir James):—"Thomas Fitzgerald, Earl of Kildare, and Lord Lieutenant of Ireland, in the year 1528 was invited to a new play every day in Christmas, Arland Usher being then mayor, and Francis Herbert and John Squire, bailiffs, wherein the taylor acted the part of Adam and Eve, the shoemakers represented the story of Crispin and Crispianus, the vintners acted Bacchus and his story, the Carpenters that of Joseph and Mary; Vulcan, and what related to him, was acted by the smiths. Their stage was erected on Hoggin-green (now College-green), and on it the priors of St. John of Jerusalem, of the Blessed Trinity, and of All-Hallows caused two plays to be acted, the one representing the Passion of our Saviour, and the other the several deaths which the apostles suffered." The several minor corporations or ancient trade guilds had their plays otherwise on the anniversaries of their patron saints, which were held in St. George's Chapel (in George's-lane, now South Great George's-street). The chief governor or viceroy was usually invited to these representations.

"RIDING THE FRANCHISES."—The triennial processions that signalled the inauguration of a new lord mayor on Michaelmas Day. They continued until 1772, when they were abolished by a lord mayor's proclamation. The shadow of the old pageants, however, was continued by the Corporation and trade guilds until the Municipal Reform Act was passed. Our lord mayor's yearly show since then is but the shadow of a shadow.

SUBSCRIBER.—ASPHALT.—There are various kinds of asphalt used, and various plans adopted for laying them down. The description used in this city for footpaths is composed of gnat and ashes or fine cinders. The price per square yard is from 1s. to 1s. 6d.

A CITIZEN.—Not at all. Thin-skinned people have generally thick skulls, or else the facts we furnished would have penetrated their craniums, and be understood as intended.

A RATEPAYER.—The secretary of the association will supply you, if written to, with all the information you desire.

SANITARY.—It is to be hoped that a short act will be introduced next session of Parliament to remedy the conflicting nature of the different acts, by amending them or repealing them altogether, and substituting a clear and comprehensive statute.

EXTRAS.—They are a comfort and a consolation betimes to architects and builders, but a curse to clients. We must say, however, that it is often the client's fault, and the consequence of his not listening in the beginning to the sensible advice of his architect.

A PROVINCIAL ARCHITECT.—By all means. The young association will be glad to hear it, and our columns will be always open to help in the subject.

Some papers and notices are held over for want of space.

BREAKFAST.—EPPE'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Eppe has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills."—*Civil Service Gazette*. Made simply with Boiling Water or Milk. Each packet is labelled—"JAMES EPPE & CO., Homeopathic Chemists, London."

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THE PATENT GLASS CUTTER.—Of the many inventions of modern days, one of the most useful and surprising is a substitute for the glaziers' diamond, which can be used effectually by the most inexperienced. In shape it resembles the ordinary glaziers' diamond, but instead of diamond, a small circular piece of hardened steel, which revolves like a wheel when passing over the glass, is substituted, and we can testify that it accomplishes its work with astonishing rapidity, and cuts thick or thin glass with equal ease. This little novelty, introduced to Ireland by the eminent firm of Messrs. Dockrell, Sons, and Co., of George's-street, Dublin, will be found invaluable to the amateur artisan and horticulturist, and is placed within the reach of all by its moderate price—only 5s. 6d. each, post free.

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It is to be distinctly understood that although we give place to letters of correspondents, we do not subscribe editorially to the opinions or statements set forth in same.

Correspondents should send their names and addresses, not necessarily for publication.

MESSRS. EARLEY AND POWELLS beg to announce that Messrs. John Hardman and Co., of No. 1, Upper Camden-street, have resigned the business of Artists, Sculptors, Church Painters, and Metal Workers, in their favour.

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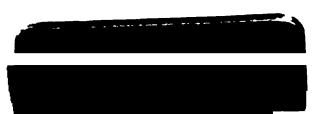
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